

989
Alcali Vindicatum :

O R,

The Acid Opiniator not guilty of Truth.

BEING AN

IMPARTIAL ENQUIRY

INTO THE

Fallacious Reasons and Erroneous Philosophy of a late

Physico-Medical ESSAY

Touching

Alcali & Acid.

Especially as they relate to the Cause
or Cure of the *Small Pox, Scurvy, Gout,*
Rheumatism and Consumption.

To which is added a Discourse of the Nature and
Usefulness of an Hypothesis in Relation to the
Practice of **PHYSICK.**

With a Description of a most Excellent Medicine
call'd *Tinctura Sanitatis*, of great use in all Diseases of
the *Head and Stomack* especially.

Acinos sui improba pendet.

By **WILLIAM COWARD M. D.**
of the Colledge of Physicians, *London.*

London : Printed for *Tim. Childe* at the *White Hart* at the
West end of S. Paul's Church-yard. 1698.



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TO THE
RIGHT HONOURABLE
CHARLES
Earl of MACLESFIELD, &c.

My Lord,

I Hope your Lordship will pardon my presumption that I have troubled you with the Dedication of a Treatise relating to Physick. But, my Lord, I know you cannot be ignorant that Dedications of Books, generally speaking, are rather so many Marks, and Testimonies of the Honour and Veneration due from an Inferiour to a Superiour, to whom we humbly offer such Presents, then wrote on purpose to be scan'd

The Epistle Dedicatory.

and descanted on by some particular Patron learned in the same Science and Subject of which the Authour writes. 'Tis upon this account, my Lord, that I humbly crave leave to offer this Treatise to your Lordship, as a Testimony of that great Honour and Veneration I have in particular for your Lordship, and for all your Noble and Ancient Family in general.

Besides, my Lord, I had another Motive to beg your Lordships Patronage, because I ever had, and ever shall have a great Reverence and Esteem for such a Gentleman, whom we may properly call a True English-man, that is, one who bestows his Favours on his Inferiours without Flattery to incite, or Rewards to bribe his Inclinations ;

The Epistle Dedicatory.

one who heartily Loves his Prince without Dissimulation, and Serves his Country as sincerely as his Prince, making the Publick Good, not his own Private Interest, the grand Concern of his Life; one who in the worst of Times durst be brave, even when Honesty seem'd a Crime; and in the best never made use of his Prince's Favour to amass, right or wrong, an unweildy Estate, and then sit down in Luxury and Ease, and spend it. Lastly, one prodigal of Life as well as Fortune in the Service of his Prince and Country, and always acting with undefining Principles of Honour; such a Person, my Lord, and truly deserving such a Character, give me leave to esteem your Lordship; and such a Man, I confess, I cannot but

re-

The Epistle Dedicatory.

really honour and adore. My Lord,
The last Motive I shall mention is
this, that the unfortunate occasion of
that Noble and truly Vertuous Lady
your Sister, the Lady Gerard of
Bromly, happening to be my Patient,
and giving me fresh Instances (af-
ter various Trials before) of the
proof of my Medicine, call'd here
Tinctura Sanitatis , of which your
Lordship was an Eye-witnesß of my
Success, tho' the Medicine was then
not so valuable by much as it is now,
having been highly improv'd by Ex-
periments ; I say, that unfortunate
occasion makes me presume to lay
this more peculiarly at your Lord-
ships Feet , having had that suc-
cess so long ago in administring this
Medicine to so worthy a Branch of
your Lordships Noble Family.

All

The Epistle Dedicatory.

*All that I can add more, my
Lord, is, that your Lordship will
be pleas'd candidly to receive this
small Acknowledgment for all your
Favours bestowed on*

Your Lordships

most obedient

and most devoted

humble Servant

to Command

Will. Coward.

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ERRATA.

Pag. 16. l. 16. leave out Are. l. 21. for Boyl r. Oyl. p. 17. l. 20. for Substane r. Substance. p. 46. l. 4. perlat. p. 55. lult. vid. Cap. of Advice. p. 66. l. 16. Natural History. p. 72. Raphani, Petrosel. Nasturt. Baccar, Dauci, Aurant. Chalybiato. Filtratur. p. 89. l. 16. Negative Conclusion. p. 93. l. 8. are the cause. p. 99. R^d p. 115. l. 9. of. p. 123. l. 7. if learning. l. 17. ridicule. p. 124. l. 6. unsfledg'd. p. 136. res angusta. p. 138. litura.

Alcali Vindicatum:

C H A P. I.

TH A T Mankind is subject to Error, is an undoubted Principle of Everlasting Truth, but very few have given *me*, I may say, *the whole World indeed*, a more convincing Argument of the Proof and Reality of this Truth, than our present Author, who is contented not only to lye under the Common Calamity, as being a part of Mankind, and so consequently apt to be

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lead

lead by Human Frailty into Error, but hath also given full Demonstration by convincing Proofs and Arguments, that he is notoriously mistaken. Nor indeed has he any just Excuse to vend such Notions to the World, but only the weakness of his Arguments produced to justify the more weak, and insufficient Grounds and Principles of Practice; so that 'tis to be hoped that none, or at least very few, will follow such Footsteps, or Rules, as he dictates, if they thoroughly examine them, and consequently the less Mischief will be done by young, and learning Practitioners in Physick, who may oft perhaps be seduced to Practice by the same Principles and Method as herein prescrib'd, if

if not forewarn'd of the dangerous Consequences of it. It is to this end that I have taken some pains to review this Treatise, and give the World a short Account of the Reasoning and Philosophical Arguments our Authour uses to enforce a Belief on Mankind, *that Acids, and not Alcalis's, are the only proper Medicines in some peculiar Distempers, as*

First, The Small Pox.

It is the common Practice (says our Authour) as soon as they perceive any Symptoms of this Distemper, to give either *Gascons, Countess of Kents, Eapis de Goa,* or some other testacious Powder, which are known Alcalies, either to draw out the *Malignity from the*

heart, or correct the Acidity of the Blood, *pag.* 2. Here I must confess, our Authour has some reason to expose the Notion of *driving the Malignity from the heart*; but it being an Argument drawn only from the common tattle of Nurses, one would have thought it might have been too mean a Quarry for a Physician to fly at; but there are some Birds (all Face and Feathers, as a Learned Gentleman calls them) rank'd even among the Species of Hawks, whose Prey for the generality are Mice, and lesser Vermin, so that as they have been bred, accordingly they seek their Prey. But farther, suppose no such reason, as really and indeed it cannot at all be allowed, yet the Authour's
 Notion

Notion of Malignity seems very unphilosophically handled, calling the Effect the Thing it self, as if a Man should call the Tract a Wheel makes, the Wheel it self. For, says he, *by reason of the Bloods quick motion in the heart, no stagnation (p. 3.) is to be found, and by consequence no danger.* If there be any danger of the Malignity settling any where, it must be in those parts where the Vessels are very small, and the Blood moves but slowly, which must be near the extream parts. By this, I think, 'tis plain and evident, that he means that the stagnation of the Blood in the Extream Parts, is the Malignity of the Distemper; which stagnation being impossible to be contracted in the Heart, there can consequent-

ly not be any Malignity there to be driven out. An Argument, I confess, drawn strong enough to convince any unthinking Man at first sight ; but the Rational and Logical Arguer will say, that the Stagnation in any part is not the Malignity it self, but an Effect of it ; so that if the Blood settles in any part , so as to send forth any Pustules or Eruptions, livid, or otherwise colour'd, we usually suppose some Malignity or Poyson perhaps got into the Mass of Blood, which by an irregular Ferment throws it out, and discharges part of it through the Pores , where it settles in Pustles or Pimples. If the ferment of the poysonous Blood be not strong enough to send it through the little

the Cavities or Pores of the Skin, it usually settles in livid Spots, which we commonly call the Signs or Symptoms of the Malignity of a Distemper, being really the Effects of an impoyson'd Mass of Blood.

And now I am talking of Poyson, I will give you a description of one actually poysoned, as it is set down by our Authour, *pag. 5. Poyson, viz. I suppose to be a quantity of such Particles, being some way or other admitted into the Blood, which being of a quite different Texture from that of the Blood, and so not capable of being mix'd with it, causes an hurry or disorder there.* This you may take for a Definition, if you please, tho' it seems, as no doubt first in-

tended, to be an entire Description of any acute Disease whatever, tho' I defie any one, that shall not be told what Disease, or Cause of a Disease our Authour intends by it, to imagine it to be the Small Pox. For,

1. That the Description, or Definition, call it what you will, suits very well to any one who has taken Poyson, is evident enough, if he will but consider the quite different Particles the Poyson infuses into the Blood, and what an hurry it oft puts it into, upon which very account it will also be a Description suitable to the Plague, if he tells you that he supposes a quantity of such Particles, &c.

2. An Asthma may well enough

nough be understood by it, especially such Asthma's as are contracted by Traders dealing in Stone-cutting or Guilding, where the little Particles of Dust or Stone, or the Mercurial Effluvia, being of a different Texture from the Blood, for want of a sufficient expansion in the Vessels of the Lungs, cause an hurry oft-times, and disorder in the whole Mass of Blood.

But 3dly, I am confident all the World, especially the Learned part of it, must allow this description to be an entire description of the Gout; for it's plain to Sense that there are heterogeneous Particles, of a different Texture from the Blood, by their being often thrown off from the Mass in Nodes and Humours.

mours. And that these different unsuitable Particles do oft cause an hurry, and disorder, no Man I believe has Impudence enough to deny : So that few Persons much afflicted with the Gout henceforwards, would grudge the Cost or Charges to turn their Distemper into the Small Pox, if it were as easie to be done, as this definition here mention'd doth make it. A Man would then have it but once (as they say) and a short time would end it, in all his Life ; but now 'tis to some poor Gentlemen a never failing Companion many Months in the Year.

4thly, Now I think on't, these Particles of a different Texture from the Blood, not being capable of being mix'd with it, caused an
hurry

hurry and disorder in a certain Gentleman's Constitution t'other day, that he was forced to be sent to *Bedlam*, so that the generality of Mankind call'd it *Madness*; others were of an Opinion, that because there were only some Particles of Wine (the too great quantity, and load the Blood imbibed, *not being capable of being mixed with it presently*) absorbed by the Gentleman, to speak Philosophically, which we commonly say *drank by him*, and that the next sleep might possibly carry off his Distemper, imagined it only to be *Drunkenness*. But Sir, let it be what it will, the definition agrees to it, and Drunkenness is oft an acute Distemper, and ends in a Fever I know: But Madness, especially

especially Raving Madness, as we call it, is very oft without a Fever, yet is caused by the admission of heterogeneous Particles into the Blood, and is attended by a great disorder and hurry.

But lastly, I suppose our Author found out a description of a Disease, and when he had done that, look'd out a disease suitable to his description, which indeed was no great difficulty, for it may serve for every Disease almost that he has treated of. But it is good to follow the Examples of the Ancients in forming definitions like the *Lesbian Rules*, suitable to every thing they were apply'd to; yet remember these so complying Rules are said to be made of *Lead*, and far be it from me that I should

should derogate so far from common Justice, as not allow the Comparison every way suitable to the Arguments. But enough for this Poisonous, Plaguy, Asthmatick, Gouty, Drunken, mad Definition or Description of the Small Pox; I shall proceed in the next place to examine the Reasons, why Alcalies do so much mischief, and Acids so much good, as our Authour observes, pag. 7.

Our Authour compares the Mass of Blood to Oyl and Water mix'd together by agitation, wherein the Globules of the Oyl lye incorporated, so as to seem to be one entire Body, yet by good Eyes or good Glasses, the Globules of the Oyl may be distinctly perceiv'd in the whole, and by a filter of brown paper separated

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rated from each other. Now these heterogeneous Particles that are admitted into the Mass of Blood, not being able to unite themselves with it, as Oyl with Water, make such an hurry, and disorder in the Blood, as it is forced to throw out in Pustules the heterogeneous Matter, and so causes the Small Pox.

A very pretty Notion indeed, were there the least probability of being true any way; but the Comparifon of Oyl and Water mixed, with that of the Serum and Blood, seems so ridiculous and absurd, as for these following Reasons it cannot be admitted.

1. The Serum of the Blood, tho' call'd the Water of it often, bears no proportion with that of common Water, either to its Colour,

lour, Weight, Texture, Taste, &c.
 or indeed any other quality (from
 which Similitude arises) then fluidity--- as you may read at large
 in the Learned Mr. Boyle's *History of Humane Blood*. I will only add
 this desparity, That Serum is a
 fluid Body, containing some other
 Body incorporated in it, which
 hinders it from being so transpa-
 rent as common Water, and ve-
 ry often has visible to the Eye
 some *Succus Nutritious* mix'd with
 it, seeming not unlike some Tin-
 ctures of Steel as to colour. So
 that if we really consider the Mat-
 ter aright, the *Succus Nutritious*
 Latent in the Serum, makes the
 Serum it self a Body almost like
 Water and Oyl, and not the
 Blood and Serum together.

2dly,

2. The mixture of the Blood and Serum is more entire and more united than any you can possibly make with the agitation of Water and Oyl. For indeed, all mixtures made by agitation, no fermentation or internal motion of the Particles concurring, are generally loose, and easily return to their selves again, being commonly but a violent confusion of the Mass broke into little Particles, and disperst into the Cavities of another Body; Motion only giving it a being, which ceasing, the jumbled Mass oft-times are by the help of Gravity or Levity, returns again to it self, and both the Bodies appear separate and distinct as at first. This is the plain Case of Water and Boyl. But Blood and Serum
are

are so entirely united *ab origine*, that nothing but a fermentation can be supposed to make such an exact mixture, no Serum at all sometimes, at least very little indeed appearing separate from the blood, especially at the first letting out.

3dly, The Blood differs manifestly from the Texture of Oyl, and will by its solution in Water, be totally united without any trouble, as a concrete Juice dissolved, so as the Globules totally disappear to the Eye, or Glass, which it does not in Oyl, as has been before said. And very oft, like mixtures made by agitation, barely *per subsidentiam*, will appear to be two distinct Bodies, and the Blood in a grumous substance subside to the bottom. Therefore,

C

Lastly,

Lastly, I conclude that our Au-
 thour means by the Comparison
 no more than this, That as Oyl
 and Water cannot mix but by a-
 gitation, and breaking of the Oyl
 into little Globules; so in the
 diseas'd Estate of the Small Pox,
 the Blood cannot mix with the
 Serum, but by agitation and dis-
 solving of it into little Globules,
 which being thrust out at the cu-
 taneous Pores turn into *Pustulae*.
 Now as I have, I think, already
 proved this Comparison to be ri-
 diculous and very lame, so I shall
 put another into his place that will
 explain the Matter as well to the
 purpose, which is not at all, as his
 doth. As when Bread finely crum'd
 (for we must come to Particles)
 by agitation is conqussated, or
 beaten

beaten up into a Pudding with Milk, if by too violent motion (as it happens in the morbid state of the Blood in the Small Pox) you press the Substance too hard into the bag, 'tis odds but the Particles of Bread (as being united to the Milk) will be thrust out through the Pores, or Cavities of the tenuous Cloath, and on the sides of it stick or adhere, in Pustules or Nobs, because by the ambient air, the Milk, as being of a thinner Substance, will quickly be exhaled and evaporated. Thus it happens in the Small Pox, the disorder of the Fever (not unlike the Motion of the Hand of the Pudding-maker) jumbles the Blood and Serum so together, as to divide the Blood into Globules

bules (just like the dividing the Bread into Crums) which at last through the very hurry and disorder, the whole Mass is put into (as if it were really agitated by a conquassating Spoon) throws out the broken Globules to the outside or Superficies of the Body, after which the Disorder and Fever ceases : This Simile, I think, is as pertinent as the other, and indeed both to no purpose, tho' I see little difference, only I want a way to stop my Pudding-maker's hand, when she or he has squeez'd out enough to stick on the sides of the bag, which they will certainly cease to do of course when they have squeez'd out all the heterogeneous Matter that was intended to be discharged.

But

But enough of this Compari-
 son, Let us now but add some Al-
 kalious Salts (pag. 10) to the Oyl,
 and it will pass through the Pores of
 brown Paper with the Water, just as
 the Blood by the addition of Alkali-
 ous Salts does through the Cutane-
 ous Glands, and fix there in purple
 spots---- At another time its drove
 out so fiercely, that it has been the
 occasion of spoiling many Angelical
 Faces, pag. 7. Besides breaking of
 the Globules of the Blood, (p. 12.)
 and causing many ill Symptoms,
 which here I don't think fit to enu-
 merate. By their (Alkalies) Dia-
 phoretick quality, there is so vast a
 waste made of the Serum of the
 Blood, that there is not a sufficient
 quantity left to supply and bring to
 maturity those many Postules (even

more than Nature design'd) that those Medicines alone had thrown out, pag. 12. O the Almighty Power and Omnipotent Mischief of Pearls, Coral, and Crabs Eyes ! that they should be able to divide the Blood into Globules , and drive those Globules through the little Cranies of the Skin to fix them there. I must own in my judgment I find but very little energy in the Operation of these Medicines, what our Authour does I know not ; only this I find, that they generally absorb the Juices of the Body, both Acid and Alcaline indistinctly (and spoil the Appetite sometimes) this is the main point, I conjecture , which they are intended for by rational Physicians to bring about their end,

end, *viz.* by absorbing Acids, but I do not find that they cause any hurry or disorder in the blood; if they had been brisk Volatile Salts, something might have been said. However, let us allow them to be Diuretick (not Diophere-tick in themselves) and as such, they certainly act upon the blood, and may do signal service, as will hereafter be made out; but how, as Diaphereticks they should do so much mischief, I cannot conceive. Nor indeed has it ever appeared, as I know, by letting a Person blood, tho' in the height of the Small Pox, as has been frequently done in Cases of Necessity, that the blood ever came out distinctly from the Serum, or divided into Globules, but one en-

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tire mass, as at other times, and very high colour'd. Now if Alkalies had divided it, sure one might perceive it at that time, especially seeing the Fever is then at the height, and Nature struggles to discharge it self; or to express my self aright, to drive or tumble out the Globules into the Cutaneous Glands, in order to form the Pox.

The next Inconvenience from these Alkalies that I have observed (says he p. 32.) is the throwing out of more Pustules then Nature designed, the destroying the Globules of the blood, and a waste of too great a quantity of Serum----. On my word a base business, that Alkalies should do all this mischief, especially such as he mentions, as Pearls,

Pearls, and Crabs Eyes, and Coral. But this is not all, there is a farther mischief happens sometimes between these Alcalizate Factions and the blood, for they make no more of breaking the Globules of the blood in pieces, and driving 'em out to the Surface of the Body, but they associate with the Morbifick Matter, and cause an Erysipela's, or St. *Antho-nies Fire*--- p. 33. very fatal. This I find is the highest and last Charge against Alcalies; and I *desie any one to say that he ever observ'd such Symptoms as these, if Acids were given from the beginning. For Acids are of that nature (p. 33.) that they confirm the Texture of the Blood, which is that red Substance wherein is contained*
the

the Biolycnium, or Lamp of Life by so doing. Nature is capable of throwing out the extraneous Particles in a way suitable to it, without the Inconveniencies that attend the other method: For the Texture of the Blood being confirm'd, and moving regularly and naturally in its proper Channels, the Morbifick Particles are only thrown out, and such a quantity of Serum left as is sufficient to supply the Pustules, and bring them to maturity without any danger of their flatting, and the Acrid Matter being again absorb'd into the Blood, and causing secondary Fevers: Besides, the Globules of the Blood being kept together unbroken, there is not any danger of being extravasated, and causing those fatal Purple Spots.--- Nor of
being

being thrown out with the Morbifick Matter, and causing Erysipila's, Hæmorrhagies, bloody Water, &c. or Deliriums, by being admitted into the small Meanders of the Brain,

p. 34. Here now we have the Summary of the whole, what good service our Acids, and bad service our Alcalies usually do in the Small Pox; and were it all true that this Gentleman says, I think he that prescrib'd Alcalies in that Distemper, ought first to enquire whether his Patient had made his Will, and settled his Affairs in this World, for I am going to give you (says he) such Medicines as will drive out the Pustules so thick, to the Superficies of the Skin, and to break the blood into such a vast quantity of Globules, *may*
break

break the very Globules of your blood (for its all made up of little Globules) that 'tis ten to one but I drive them so out, as to cause livid Purple Spots, or *St. Anthony's Fire* at least, or force it into the little Meanders of the Brain, and bring a Delirium upon you presently : Or lastly , I'll apply such a Medicine as shall spend such a vast quantity of Serum , as you shall not have enough to supply Matter to fill up the Pustules of the Small Pox. *This, Sir, I'll do by a few Crabs Eyes, Pearl, or Coral.* So pray consider of it, and settle the Affairs of your Household----. O! but Doctor , says the Patient, I doubt I have all these Symptoms already , at least some of them , for I see the Livid Spots,

Spots, I am sensible of an impending Delirium, I piss blood, &c. Are you so, I know not how you should be otherwise, replies the Doctor, since the Globules of your blood are broke by these *damn'd Alcalis's*; but be of good cheer, Acids will confirm the Texture of the blood, make it more regular in its proper Channels, and throw out only the Morbifick Matter (*keep all the rest behind*) and keep a sufficient quantity of Serum to fill up the Pustules, so that you need not fear any flatting of them, or the danger of a secondary Fever. Very good, if I shall have all these Comforts from Acids, I'll not despair of my Life; but only I am very doubtful of the Success, because I have
seen

seen the Mischiefs Acids have brought upon People in such a case, and shall not use them for these Reasons.

1. I find Acids are very apt to coagulate or thicken the Juices of the body, especially the Serum of the blood. (Mr. Boyle says, p. 93. of Humane blood) Having found (says he) that Acid Spirits would coagulate Serum, I thought fit to try whether Alcalies would not oppose or retard its Coagulation. Of which trial the Event was, that having put Spirit of Humane Blood to a convenient quantity of Serum, and caused them to be kept stirring over a very gentle fire, tho' the Volatile Alkali did not hinder the Coagulation, yet it seem'd to make it more slow, more soft and lax. Now from
this

this Experiment if true, (as no doubt but all Men attribute that quality to Acids) I find a great many Inconveniencies may happen to a Patient who is treated with Acids in the Small Pox. As

1. The blood by this means will be very apt to coagulate and grow grumous in the Vessels, and the Serum likewise (for they work not only on the blood, but Serum also) will be thickned by admission of these Acids into the blood. Which if so, we may easily conclude many violent Symptoms will follow: as first, Asthma's or great short breathings and pantings, by reason of an (almost) Stagnation in the blood, and inability to circulate freely in the Vessels; so that if the Patient be
not

not quickly let blood, or have Alcalies given him (perhaps both may be required) 'tis ten to one but he dyes, and the grumous blood, made by the coagulation of the Acids, settles in the Lungs (as by ocular demonstration is evidenced by some being dissected after a violent Fever or Small Pox) and is fixed there in large Purple Spots, or Clots rather, showing plainly the Cause of his Death; which had it been by Alcalies dividing, or breaking the whole globular Mass of the blood, it would not settle in the Lungs in Clots, or large Spots, but equally all over they would appear either livid, or inflamed, which it does not.

2. By

2. By being coagulated by these Acids, we may easily find a reason why the Small Pox in some People do not *so kindly come out*, as we say, but very difficultly appear, nay, if they do at all, prove very small, and want Liquor enough to distend, or fill up the Pustules. And these Cases we usually term dangerous. For the Acids not only will coagulate the Blood, but Serum also; so that indeed if you apply not Alcalies speedily, or take care to give sufficient Liquor to supply the Pustles with Matter, and generate Serum fast enough to predominate the Acids, 'tis odds but the Patient dyes.

3. By being coagulated with these Acids, the Texture (as our Authour calls it) of the Blood, is

D

con-

confirm'd. He has us'd a word in this place that I do not well understand, tho' I believe he had as good as said, *thickned, or coagulated,* as I term it. For by the Bloods being *confirm'd*, I suppose he wou'd mean *strengthened*, that is, in his sense, is so united within it self, as not to be by innate or adventitious Alcalies thrown out into the Superficies of the Skin, and cause either great numbers of the Small Pox, or livid Pustules. Very good, all this another Man would call *Coagulation*, which will certainly require the help of adventitious Alcalies, or else I am sure the Patient will quickly be undone; for by this means the Blood can throw out but a little quantity of Serum, and that unequally mix'd

too, so breeds Pustules, and no rising Small Pox, which stagnates by reason the grand motion by Acids in the *larger Vessels* is retarded, and so consequently in the *lesser* it must of necessity be *wholly stop'd*. Hence those Spots grow livid, which Alcalies by making good the Circulation in those lesser Vessels, cause the Blood to absorb again, and retrieve the Pustules from a livid to a bright red Colour (as has been by experience observ'd often) and the Case less dangerous.

As to the Nature of the Salts of the Blood, Mr. Boyle, p. 58. states two, a Volatile and Marine (not fix'd Alkali, or Lixivate) Salt, which will *foam and ferment with an Acid*. And by the small appear-

ance it yielded by Calcination, he was induced to believe, that all the Blood is volatile in a good fire, and consequently that it will yield no fixed Salt, vide p. 27. of Human Blood. If so (as has been oft observed) it must be granted, that such Volatile Alcalies cannot properly be said to be the Cause of any Distemper (I mean efficient) unless some coagulating Acid joyn with them, and in the conjunction either cause a violent ferment, so breed Fevers, or over-power its volatility, so breed Nodes, as in the Gout, &c. Thus our Disciple of Helmont, I doubt, has mistook, and not the first time, the material Cause for the Efficient, if we allow it to be a Cause at all; for to speak properly, it is the Effect produced

duced by an Acid. For the Volatile or Marine Salt having receiv'd some Acid into it, ferments in the Blood, or causes violent motion in the Mass, which motion originally is certainly from some Acids, not Alkali, and if the ferment arise too high by adventitious Acids poured in, it may break the lesser Vessels, especially situate near any common Emunctory, which may cause large *Hæmorrhagies*, or Pissing Blood, either by over distending, or fretting the lesser Vessels; for I can hardly be of an opinion that the Acidity of the Blood *commonly* erodes the Vessels (though it may be so, if poured on the Patient too fast) but rather the too violent motion of it in its Channels; for we see

that *Hæmorrhagies*, and Blood-pissings are the Effects of Fevers principally, not the Small Pox only. Again, If an Acid super-added grows too powerful in the Mass, there will necessarily follow a Coagulation both of the Blood and Serum, the fatal consequence of which, I have already mentioned, so shall not repeat it. Here probably the use of Temperate Alcalies may do signal Service, and have done I doubt not, in order to reduce the Blood to a right Texture, and confirm it as I mean, that is, bring it to an equal mixture of Serum with itself, and invigorate it with a due proportion of Spirits, so as not to subside into blew Spots, or suffer a stagnation. This I may properly

perly call, in some sort of sense, a *confirmation of the Blood*, when the hurry and disorder raised by the fermentation of some Acid (either Nitrous from the very Air, or from Acids eaten) with the Marine Salt of the Blood, or Volatile, is attempered and pacified either by the strength of innate, or force of adventitious Alcalies, which Notion seems not in Mr. Boyle to be groundless, because the Serum and Blood it self oft-times are manifestly brackish to the taste, and a Marine Salt our Authour allows to have an Acid in it. But our Authour can never, nor could ever, yet find any Acidity in that Morbid Blood, and consequently there must be none, because by his taste he cannot discover it. *O si bene*

saperet ! was a good wish once that a Cook (all the Latin he knew) said of his Apprentice, and I think very applicable to our present Authour, if he would but be pleased to set his Distillatories on work, and try what Acids may be found in Blood , especially if tending to Putrefaction or Morbid. But the Particulars of that I hope we shall have in his design'd History of Human Blood, which I expect to be done with some Signs of Learning and Philosophy.

Thus I have done with the Philosophical part of one Chapter, and, as I think, have plainly shown, that all those ill Symptoms which our Authour attributes to Alcalies are, at least, may more probably,
and

and upon better grounds be attributed to Acids, especially such unactive Alcalies (I mean as to the causing any hurry in the Blood) as our Authour names, *viz.* Gascons Powder, Pearl, Crabs Eyes, &c. should he have named brisk Volatile Alcalies, as *Sal Volat. C.C.* or **ci*, or indeed *rad. serpentar. Contray.* I might have yielded to what he said, only with this remark, that our Authour has just told me what Dr. Sydenham said long before, only he has explain'd his Notions of a Temperate Regimen with more incoherency, and with a far greater Evidence of an unthinking Head, then that Doctor did before him.

As for the Receipts he has set down of Juleps, &c. I suppose they

they are faithfully transcrib'd, and taken off the File into a Book ; so that there seems no Error to appear there, which had indeed been unpardonable had he brought the Doctors, who formerly prescribed to his Shop, into the same Scrap with himself, and have made them guilty of Blunders in Practice, as our Authour has been in Philosophy.

Lastly, The dissolving Power of Acids, seems to contradict many of our Authours Assertions, especially in corroding the small capillary Vessels, and making such irregular and tumultuous Ferments with the Alkali of the Blood (as our Authour allows it to be plentifully stored with) even to threaten, if not often produce a rupture
of

of them, by which we have sometimes *Hæmorrhagies*, &c. but having touch'd already upon this Point, I pass on to give you an Alcalizate Method, which I think may be much more proper, more safe, and I am sure more rational.

First, No doubt but a Vomit suitable to the Age and Constitution of the Patient, is in all Cases highly requisite in the beginning.

Next Blood-letting, if there be no contra-indication, is very proper in the beginning also.

Lastly, The main point of all is the Care, Diligence and Vigilance of the Physician, to observe every Symptom, and to help Nature when too much depress'd, and to reduce the Blood to a regular and due temper, when grown
too

too exorbitant. This I would have done, not by throwing Medicines upon the Patient, but rather by being cautious and diligent *what not to give, and when not, and how seldom.* For as our Authour has well observ'd, a Physician in this case oft deserves more for not writing and prescribing to the Patient, then for so doing, being Rewarded meerly for his Vigilance to prevent the dangerous consequences of the Distempers, then by curing it by crowding in Medicines. As a Sentinal may as well, nay perhaps better deserves to be rewarded for keeping such a strict Guard, so as an Enemy cannot possibly enter, then a number of Men may for beating an Enemy out of a Fortress they gain'd by force. But

But as soon as your Vomit is over, it will not be amiss to give such an Anodyne as this :

Rx *Aq. flor. Paralys. Papav. an.*
ʒij. Cinnam-borreat. ʒj. Sal.
Vol. Oleos. ʒss. Diacod. ʒj. m.f.
haustus.

This will not only allay the Ferment, and produce a gentle Sweat, but make the Pox come out kindly, (especially if Blood-letting has preceded, and been thought requisite) and expel and drive out the Malignity latent in the Blood, be it what it will, in order to the Relief of the Patient, for which end a good Cordial of the same nature may be serviceable, *viz.*

Rx *Aq.*

Rx *Aq. Lactis Alexit.* ℥ss. *Cer-
ras. nig. Melissæ* ṽṽ *z*ij. *Epi-
lept. Langij* ℥jss. *Tinct. Sanitatis*
3ss. Sacch. perlet. q. s.

Of this, or the like Cordial Ju-
lep, the Patient may drink some-
times, and that but sparingly, ac-
cording as the Pulse indicates.
As to Powders,

Rx *Pulv. è chelis cancror. comp.* 3j.
Antimon. Diaphoret. 3ss. *Salis*
prunell. ʒij.
f. pulv. subtiliss.

Vel, Rx *Salis. Prunell.* 3j. *Bezoar*
Mineral. Pulv. è Test. Ovor.
ṽṽ 3ss.

f. a. f. pulv. subtiliss.

But

But if the Pulse be very low, as at the beginning it seldom happens, unless by unseasonable letting Blood, and by taking away too much at once, then it will be requisite to take some of these following Powders.

Rx Pulv. Gascon. rad. serpentar.
 Contrayerw. \overline{aa} ʒj. Marg. ppl.
 Bezoar. Orient. \overline{aa} ʒß. Sal. Vol.
 C.C. gr. x.
 f. pulv. subtil.

You may give some of them according to direction in such a Draught :

Rx Aq. Menthae, Lactis Alexit. \overline{aa}
 ʒiß. Epidem ʒß. Tinct. Sanitatis
 gut. xx. Syr. Garyophyll. ʒij. f.
 banstus.

Or

Or instead of *Syr. Garyoph.* you may sweeten it with Sugar of Pearl if you please.

If the Pulse shows the Fever to be exorbitant, an equal quantity of *Gascons Power* and *Sal. Prunelle* only given in a convenient Vehicle, according to the judgment of a prudent Physician, will answer your ends in many violent Symptoms, better then all the Acids, tho' never so mild, that you can prescribe.

I hope the Reader will pardon me, that I add no more Prescriptions in this Distemper, because, as I told him before, *The best Prescription in the World is the care and vigilance of the Physician to watch all opportunities, as may be, to prevent the Grounds of administering*

string much Physick. Tho', I must confess, in some Cases, (tho' perhaps but few) where a Person has contracted an ill Habit of Body, many Medicines may be absolutely requisite.

Another Reason why I add so few, because being in English, they will be apt to give the Receipts in all Cases and Constitutions alike, who think themselves wise enough to manage such a Distemper without the Advice of a Physician, so I'll give such as little occasion as possible of doing Mischief by English misapplyed Prescriptions, but do hope the Good they may do a great many, may make some atonement for the Fault of giving any English Directions at all for the Unskilful to work by.

I should here have finish'd this Chapter, had I not just before mention'd the Expelling a Malignity by these Alcaline Medicines, and given an hint of their being rather Diuretick, then Diaphoretick, wherein I shall examine first, this Gentleman's Opinion (it being borrowed from Dr. Sydenham) *Concerning the filling the Small Pox with over abundant more Malignant Matter with Alcalies then Acids.*

2. The Diuretick qualities of these Alcalies ; I say, these our Author mentions, viz. Coral, Pearl, Crabs Eyes, or indeed all the whole Composition of *Gascons Powder*: Not but that they may be Diaphoretick also accordingly, if they meet with an acid Juice in the Body, to produce a Ferment, like that

that of Juice of Lemons and Corall in the Preparation of *Syr. è Corall. Comp.* But this I attribute not to the Intrinsick Nature of the Body it self, but the accidental acid Juice it has happen'd to meet with, as Vinegar drank immediately after a Dose of these Powders, never fails to produce a Sweat. But to return to my Question, *i. e.* Why Alcalies should throw out so much Malignant Matter, &c.

In the first place, I think it pretty plain that these Alcalies are not such violent Operators, so cannot consequently drive out the Matter so furiously, as to bring imminent Danger on the Patient. But grant they did so vigorously operate, as to drive out all the

malign Matter through the Glandulous Pores of the Skin. If it be a *Malignant Matter*, surely it ought all to be driven out, and not lock'd up by Acids in the Mass of Blood, for that is but damming up a Current in one place, in order to make it break out with more Violence in another. In short, if malignant, why may it not wholly, if possible, be expell'd: If not malignant, why may not Alcalies be given to preserve the Tone of the Blood from imbibing any Malignancy at all? *Oh! but they drive out too much Matter, and perhaps good with the bad Blood, and make the Pox so large, as Nature is not able to discharge herself of the Burthen.* Very good, I do believe it is possible, nay highly

ly probable, by too hot Medicines, to force out too much Serum into the Pustles, and make them very large. But pray what danger in being large Pustles? I have known, and most People oft apprehend most danger from small little Pustules. O! but the Alkalies will highly intend the Fever that accompanies the Generation of these Pustules. Truly, such as you mention, I believe will not, but if the Physician will prescribe such hot Medicines in that state, as will, you must account him a Blockhead, and not a Physician. So that I say upon the whole, the Method by Alkalies is certainly more safe and prudent. A method by *Acids* may possibly be sometimes safe; I say possibly, be-

cause some Patients cannot be killed by any irregular Practice whatever, so it be not down-right Poison. But the care and prudence of the Physician to choose what is best, is the safest Method in the World.

As to the Diuretick quality of these Powders, I shall say but little, because the *modus* of their working has been already sufficiently described by the learned Dr. Willis in his second Chapter de *Diureticor. formulis*, in his first part of his *Pharmacent. Ration.* *Quorum operandi modus* (says he) *& ratio si inquiratur facile constet Pharmaca hæc Sanguinem non fundere, neque sensibilitèr præcipitare. Itaq; dicendum erit hæc in dyscrasia Humorum, & Sanguinis acetosæ;*
inter.

interdum Diuretica existerent, quatenus Sales Acidos combinatione sua ligent, & compescunt, proinde ut cruor fluxionibus & coagulationibus immixtis Serum extravasatum resorbeat, & ad Renes transferat.

And thus I have done what I thought fit to say in administering Acids in the Small Pox, hoping our Author will not take it ill that I have added this last Reason in Latin, for I suppose he wants not Friends to Translate it for him upon occasion, better then he did *Helmont*; *vide cap. of Consumptions.*

CHAP. II.

Of the S C U R V Y.

I Am now come (says our Author) to treat of the Disuse of Alcahes in the Scurvy , pag. 42. Tho' I expect the Cry of all Mankind against me, p. 16. And very good reason, my Friend, all Mankind should cry out against you, when you take such Measures, and propose such Rules of Curing the Disease, as will infallibly prove the Ruin and Destruction of the Patient in the end.

But there are two most potent Arguments to convince all Mankind

kind that Acids are the only proper Medicines to cure the Scurvy: Because first of all by a Chymical Analysis it doth appear that the Blood of Scorbutick Persons hath by much a greater quantity of Volatile Alkalious Particles, then that of sound Persons, p.44. Besides which some quantity more or less of a lixivious fix'd Alkali, which forasmuch as ever I could find, the blood of sound Persons is altogether destitute of.

2. Seamen and Surgeons, that have been long Voyages at Sea, have told our Authour, page 45. That the Seamen and Mariners have been cured of the Scurvy by eating Oranges and Lemons in Spain, after their return.

If

If these were those *Herculean* Arguments which no body could answer, our Authour ought certainly to be styled, *The Grand Reformer of Physick* : But seeing by the Experience of a great many Learned Men (such as I could here name, were it not that I have a greater Honour for their Memories, then to bring them forth against so mean an Antagonist) and by a *Chymical Analysis* made by Mr. Boyle, p. 58. it doth appear that the blood is impregnated with a Marine Salt, not a fix'd Alkali, or Lixivate, as our Authour says, neither has the blood of Scorbutick Persons more Volatile Alcalious Salts than others, but rather less then that of sound Persons, *vide Histor. of Humane Blood.*

Blood. Now what is the Consequence of this Assertion.---Our Authour with as great confidence as if it were true, asserts a Position directly contrary to the Experience and Experiment of the Learned Mr. Boyle and others (whom for brevities sake I here omit to name.) And now I'll leave the World to judge, whose Authority is to be rely'd on. But a confident and bold Assertion, will with some pass for an Argument, and People will have this favourable Construction of it, *That sure the Man that asserts this to be true, would never do it, did he not know it by his own Experience to be so;* being willing to think that there is no such thing as an Impudent bare-fac'd Lyar. And truly I am
 apt

apt to have that favourable construction too ; but I must beg our Authour's pardon if I believe my own Eyes and Experience, and tell him, That I have often seen the Blood of highly Scorbutick Persons almost loose its redness, and look'd of a wheyish Colour , which has yielded little or no Volatile Salt at all. I must confess I am of opinion, that in the Mass of all sorts of Blood is contain'd more or less quantity of Volatile Salts or fixed ; and the more of the Volatile is contain'd in the Blood, the more brisk and lively the Creature is : and if it imbibes so much adventitious Acids as to make a *Luēta*, or Ferment, it might perhaps at present make the Animal brisk and lively ; but if it be in
so

so great a quantity as to depress the Volatile Salts, the Animals will then grow dull and heavy, with a great many more ill Symptoms that usually attend the predominancy of Acids in the Blood, tho' our Authour could never yet taste any acidity in the Blood. Nor indeed, to take his own comparison, do I believe he, or any one else will be able to taste a spoonful of Vinegar, if beat up well with two or three Ounces of Oyl.

The next Argument is drawn from Mariners eating of Oranges and Lemons in *Spain*, and curing the Scurvy thereby. I love a Man, that to make good his Cause, tells half a Story, and draws an Argument from a Tarpaulin to prove a main point in Physick.

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Now

Now if our Authour had said,
*And the Eating of these Oranges
 and Lemons generally puts them in-
 to a Loosness, and they presently grow
 well after it*, he had done justice
 to the Tar, and had stumbled on
 a good Philosophical Reason, why
 Temperate Acids cure such Scor-
 butick Persons: But I doubt our
 Authour was afraid to tell the
 whole Story, least because a ma-
 nifest Reason of the Cure would
 be discover'd, which is contrary
 to his way, he loving to give Rea-
 sons for a Cause that was really
 none, and err by himself, rather
 then follow the Rules and Di-
 ctates of common Sense and Rea-
 son which others pretend to:
 For by it 'tis plain, that the Scor-
 butick Matter being *per accidens*,
 purg'd

purg'd off, the Mariner returns to his first state of Health which he had before; and grows well of course. So that an easie Solution may be made of the Reason why Oranges and Lemons do occasionally Cure such Scorbutick Persons

But in more stubborn Cases we are forced to have recourse to more powerful ones, pag. 47.

I would very willingly know what those *powerful Acids* are which will cure the Scurvy; perhaps a large Dose of *strong Oyl of Vitriol*, or *Aqua Fortis* you mean, which will do the Patients business effectually indeed, and cure him of all Distempers; but in the mean time the World cannot but declare the Physician a Villain, and

and the Patient a fool to use such Medicines as these ; nay though he use but *Sp. Δ^{u}* , or *Sp. Vitriol*. I think he forfeits his Reason, and betrays his Judgment very much, that he would venture his Constitution upon an Experiment when he need not. Hold ! but read on, and you'll find his strong and more powerful Acid is either a *Preparation of Antimony*, as he mentions it, or a *Volatile Spirit of Tartar*, which is of extraordinary use in curing this Disease.

I hope the Patients find it so ; but I must tell you, that if your Volatile Spirit of \square be so fine a Medicine as you pretend to, I wonder you endeavour to bebauch it, by re-affusing it upon an *Alkali*, viz. the Calcin'd Caput Mortuum.

inum. But page 51. it answers any thing that is said of a true Panacea; sometimes working by Vomit, sometimes by Stool, sometimes by Urine, and sometimes by Sweat, nay once by Salivation. This is a most admirable Medicine indeed! tho' the first time, I think, that I ever heard of *Tartar Salivating* any person, but our Authours; and were it not that it is an acid Spirit, which usually fixes *Mercury*, I should have found out a Reason to have explain'd such rare Effect, viz. by supposing the Patient had for a known Disease took a great deal of *Mercury* before, which lodg'd sluggishly in his Body, and by such a Spirit, as Spirit of ☐, being afresh exerted into motion caus'd a Salivation. Such a Reason might

F be,

be, (I say) but only 'tis seldom, or very rare, that Acids excite a Salivation, except yours.

I am unwilling to give a Reason for an Effect, the truth of which I very much suspect, least I should do as a certain Writer did of late, who gave Reasons to explain the probability, as well as possibility of old Trees flourishing without any Bark; but upon Examination it was found that the flourishing Boughs proceeded from a young Tree encompassed by an old barkless Hulk, and not from that Hulk it self, (*Vide the History of Oxfordshire.*) That is, in short, our Philosopher gave Reasons to explain how 'twas that a thing might be which was not in Nature; and so may I (perhaps)

if I should endeavour to explain how your *Panacea* can Vomit, Purge and Salivate. But I think it is a very ticklish Medicine to deal with : for suppose I find a Patient has a *Diarrhæa*, and I intend with this Volatile Spirit of ☐ to make a Revulsion by Vomit, as sometimes 'tis done, whip Sir, the Medicine obeys not my command, but purges my Patient perhaps out of his Life ; and what use then can such a Medicine be of, in whom I cannot confide to answer my intention. So on the contrary, it may vomit when I design purging, nay perhaps *salivate a poor, thin, emaciated Patient undesignedly* ; and when I intend to use it again to purge off this Salivation, it presently shows

me another slippery trick, and vomits him, and raises the Salivation higher. A blessed Practice to be confined certainly to no Form or certain Operation! and a Patient taking such a Medicine, ought to have a strong Faith (which does Miracles) before he takes it; and if he be not curable by *Acids*, he ought firmly to believe he shall, & then perhaps he may. And indeed so he ought in Civility and Compliance to make good your Arguments, and for no other Reason: but if he acts any thing thing with prudence and discretion, as wise Men do, he ought to stick wholly to Volatile and fixed Alkalies, and not to venture his Life and Reputation to try whether he can demonstrate you to be

be

be in the right or wrong. I shall conclude this Chapter with an easie and pleasant Method of attempting the Cure of the Scurvy.

According to the Constitution of the Patient, Blood-letting or Purging is very requisite, and indeed perhaps both: and if purging, very frequent, rather than very violent, is most proper.

I have found a Vomit oft-times do very signal service, especially if given with a little *Syr. de Spinâ Cervinâ*, to make it *Emetico-purgans*.

*R. Vini Bened. Syr. de Spinâ aa
3vj. Aq. Lactis ℥iij. m. f. ban-
stus. Emetico-purgans.*

After such a Draught it will be
F 3 highly

highly proper to give an Anodyne Draught, such as is mention'd in the Chapters preceding, to be given at Night in the Small Pox. The Day following he may take such Pills as these, if he please.

*R. Limaturæ ♂^{tis} cum f. * ppt.
 ʒij. Sal. Vol. *^{ci} ʒij. Millep.
 ppt. pulv. è Test. Ovor. āā ʒj.
 OL Junip. chym. gutt. vj. Gum.
 Amon. Aq. Raph. comp. solut.
 q. f.
 f. a. f. pill. &c.*

After a convenient Dose of these Pills, the Patient may drink a Draught of this bitter Wine, which I have very oft prescrib'd with great Success in this, and all other Distempers, when the Principles

principles of Life seem to grow rappid
and much depress'd.

R *Limaturæ chalyb. cum* *^{co}
ppt. ziss. quæ preparata sit hoc
modo---- R *Sp. Sal. Ammon q. v.*
Hanc Limaturam optimè puri-
ficatam à sordibus, & per mar-
mor lævigatum tenuissimè di-
flusam, asperge, & sicca in
umbra, ter vel quater conte-
rendo, donec in pulverem te-
nuiissimum redigatur, s. a.

R *Limaturæ sic ppt^a ziss. Vini*
Xerensis opt. (i. e. non saporis
retorridi, sed mitioris & iij.) stent
simul 48 horas in lagenâ vi-
treâ clausè coopertâ, Vas. sub-
inde agitando. Postea---

R Rad. Raphani Sylvest. Gentiana
 Petrosel. \overline{aa} 3j. fol. Cochlear.
 Nasturt. Aquat. \overline{aa} m. j. summis.
 Absyn. Marrubij albi \overline{aa} m. ss.
 Baccar. Junip. Sem. Dauci.
 \overline{aa} 3ij. Cort. Aurant. duor. ---
 s. a. pp^o omnia, & vino cha-
 lybiato ita pp^o infundantur
 per 24 horas ad minus, & dein
 coletur, & filtretrur Liqueur.
 Liqueoris sic filtrati lbj. adde
 Croci orient. opt. 3ss. & sic pro-
 rata proportione.

This Preparation I have here
 set down, because some Apothe-
 caries think it enough to pour a
 quantity of white Wine on the
 filings of Steel, and to keep it
 for use. Whereas it only turns
 the

the Steel into a Vitriol, and so quite alters the intention of the Medicine. Besides, being not filtred, it looks very oft muddy and thick, which this does not do. And in my Opinion, indeed this is the best preparation of the bitter Steel-wine that I ever yet met with, not doubting but others have made as good, tho' it never came to my knowledge. However as to this, if truly made, it is very pleasant to the Taste and Eye, looks extremely fine and clear, and is strongly impregnated with the Steel. In short, it is a very serviceable Medicine, if rightly apply'd, especially if you add a few drops of *Tinct. Sanitatis* to every Dose in cold Constitutions.

Another

Another easie method, and not so chargeable, is this :

R *Op. cum* Δ^e ppt. 3jss. Extr.
Gentian. 3j. *Ol. Sassafr. gutt. iij.*
Pill. Stom. cum Gum. 3iij.
Bals. Pern. q. s. f. pill.

Of these the Patient may take five or six every Morning, drinking a Glass of White-wine with twenty Drops of *Tinct. Sanatatis*, and so go and manage his Affairs as at other times.

To some I only direct this Prescription :

R *Ostreor. Colcebst. maximor non multum Salitorum* x vel xij. *pro libitu.*

Comede.

*Comede, &c. super bibendo Vini
albi vel Xerens. mitior. ℥ss.
Tinct. Sanitatis gutt. xxx. su-
per deambulendo.*

This with some Persons has agreed extraordinary well, both for the cheapness and pleasantness of the Medicines. And I can assure you, where the Patient stirs much after, it it will do signal Service.

This shall suffice to give our Reader some hints of Medicines, being Alcaline, which he will find to be most proper and useful in this Distemper. Tho' perhaps other Physicians may add others, or alter these at their pleasure, or as seems most agreeable to the Temper and Constitution of the Patient,

Patient, looking upon the Judgment and Discretion of the Physician to be far beyond the best Receipt that ever was, or shall be invented; the Effects of the most certain Remedy, misapply'd, being often baffled, and by Ignorance rendered insignificant.

CHAP.

C H A P. III.

Of the GOVT.

TH E face of an Argument, I confess, and pretence to a true Notion, lyes most in this Chapter, and at first sight seems with its plausibility apt enough to deceive the uncautious Reader, till the depth of it be discovered, which I'll do as briefly as I can.

First, *The Nodes in Gouty Persons are filled with a chalky Matter, like Coral, or Crabs Eyes, p. 47. and consequently an Acid cannot be the Cause of any such Matter, but an Alkali.*

Se-

Secondly, Where this Chalky Substance is laid, it is placed as a Centry to guard the Part; nay the Blood at times must all, or at least great part of it, (pag. 53.) pass through the Part or Parts where this Chalky Substance is lodged, by which means a Man would think it should be sufficiently guarded from any more growing Acid. And consequently it should not cause those violent pains in the Part as it does.

From which it may be inferred that it is not from the acidity of Rhenish Wine that makes the drinking of it pernicious to Gouty People (p. 58.) but from its abounding with Spirituous Particles more than other Wines.

Strange Reasoning for a Disciple of Helmont (as you please to call

call your self, p 151) especially when the Cause of a Disease is inquired into, and not the Effect taken for the Cause: But all unreasoning Heads do *resum in cortice ludere*; therefore no wonder such Consequences are drawn from such Positions; and had Helmont been alive, I question whether he would not have been very angry with his Disciple, because

I. Helmont knew, and all that understood Chymistry, that all Acids do powerfully fix Alkalies, as may be seen in all the preparations of Mercury and Tartar, Tart Vitriol, and indeed all others in Chymistry. Now you your self asserting, and all the Learned World knowing the Blood to abound with Alkalious Salts, both
volatile

volatile and fix'd, what can any one imagine, but that in Reason and Philosophy (*two Strangers to the Disciple of Helmont, I doubt*) some more powerful Acid then ordinary, should coagulate these Volatile Salts of the Blood, and (as Mercury fixed by Spirit of Nitre in preparation of Sublimate Corrosive) and drive 'em out into the Extreame Parts, and lodge them there. Now that this Parallel may seem to bear, all the World allows Mercury to be a Volatile, and Spirit of Nitre, no doubt, an Acid; both which being poured upon the Mercury, makes that which we call Mercury Corrosive, being one of the strongest Poysons that is, and being but outwardly apply'd, will corrode,

tear,

tear, and burn all the places it passes through (as *Lemery* observes) what it will do *inwardly apply'd*, is oft too fatally manifest, when a despairing person covets to be his own Murderer, by endeavouring with it to pacifie his Mind with the Torment of his Body, and ease himself at once of his Trouble and Life. Now altho' the Acids receiv'd into the Blood be not of power enough to convert the Alkali Salts into Poyson, yet it may be reasonably presum'd to be of strength enough to fix these Salts, and to tame their Volatile Energy, which being lost, the Blood by bare Circulation may, and probably does, drive out these unactive Salts, and lodge them in the Extream parts of the Body, where

carrying some of the fixing Acid with them, tho' but little, they turn into Chalky Nodes. And to convince any one that there is a Latent Acid in that Chalky Matter, a good Volatile Spirit of * dissolves such Matter in a trice, if mix'd together, as may appear by Experiment. Now Matter so lodg'd near the Congress of the Nerves and Tendons, being usually on the Joynts, may be irritated by a fresh afflux of Acids, which passes through the part or parts (as you say) where this Chalky Substance lyes, and be so far from being defended by your Alcalies, as that it may by conjunction cause a ferment and violent irritation in the part, and consequently more pain there then any

ny where else. This, I say, may be more rational to suppose, then that so little Alkali (being, as I say, *not all Alkali*) as is lodg'd there can defend the Acid Salts falling as it were in a *deliquium* upon the part, and corroding it.

From which it may be inferr'd that it is from the acidity of the Rhenish Wine, and other Acids (either fixing the Volatile parts of the Blood, or communicating to the same Mass a fixed Tartareous part, which Acids coagulate) that arises, that great Mischief to Country People. And whoever shall rightly consider of it, will certainly be of Opinion, That if an Acid coagulates the Salts, or Juices of the Blood, so as to generate an Alcido-Alcaline Matter, that

Acid is properly called the Cause, and not an Alkali the Cause of the Distemper. This is another Remark where our Disciple of *Hellmont*'s takes the Cause for the Effect, or to help him out a little, the *Causa Materialis* for the *Efficiens*, supposing such Chalky Matter were totally Alkaline, as it is plain it is not.

Now I could here add more to the same purpose, but I hope this will be sufficient to prove the reasonableness of using Alcalies, especially Volatile, in this Distemper, and not Acids; the Mass of Blood (to say nothing of Nervous Juice) being upon more probable grounds to be corrected and amended by such Medicines, then otherwise.

I could here, if need required, cite several Cases wherein these Alcaline Salts (especially that *Tinct. Sanitatis* before-mention'd, taken in a Glass of fair Water) have been of extraordinary Service at the beginning of a Fit, nor indeed is it dangerous in the state of a Disease to administer them, tho' I find they do the best Service in putting off a Fit, or diminishing the usual duration, if timely given. But a confirm'd Gout has as many Medicines for it as an Ague or Tooth-ach, and generally all of 'em good for little or nothing. So I shall pass on to

CHAP. IV.

Of RHEUMATISMS.

Here's a Distemper that our Authour says, pag. 73. he *had to do with Multitudes under it, tho' he said he had not much to do with any in the Gout*, pag. 54. Nor will he trouble himself to investigate the Original Causes of this Distemper, p. 93. But p. 94. he infers by one Experiment that it proceeds not from Acids, but Alcalies.

All this is very fine! That he had to do with few in the Gout may be very probable; and it may perhaps be wish'd he had to do with

with fewer in the Rheumatism---
 if such be the method: As to the
 Cause, *he troubles himself not to
 find it out, or investigate it (as he
 calls it)* But in the next page *he
 finds 'tis Alkalies*, and indeed, I
 believe, as he says, *without any
 trouble at all*. For he does not
 seem to have taken much pains to
 find out any thing that he pre-
 tends to know.

In the next place he starts an
 Objection, which no body else
 could pretend to give, from the
 parity of Blood and Milk's being
 coagulated by an Acid, which may
 seem to be the reason of that fize-
 nefs and viscosity of the Serum;
 and because this Comparison, as
 he says himself, *pag. 76. is of no
 validity at all*; he hopes, *pag. 77.*

to have freed Acids from occasioning the visconsness of the Serum of the Blood in a Rheumatism.

This is such a Jargon of *Why's*, and *Why not's*, that I seldom meet with, but in such an Authour as this, To conclude *that Acids cannot make that viscosity of the Blood, tho' they do in Milk, because there is no Comparison between Milk and Blood.* Stand still a little Reader, and consider the Consequence of such arguing, and the incoherence the whole Sentence has in it self, and how it confutes it self; take it Syllogistically.

If Acids make a viscosity in Milk, they cannot do it in the Blood, because between Milk and Blood there is no Comparison, as he allows.

But

But Acids make a viscosity in
Milk. Ergò.

See what a wide difference
there is between right Reasoning
and common Talk ; People that
speak what is sense, and People that
talk any thing, Sense or Nonsense,
so it be but sound. I could wish
our Authour had read a little Lo-
gick , and little enough , God
knows, perhaps would have born
a true proportion to his Know-
ledge in Practical Physick, then we
should have had better Argu-
ments to have supported his Phi-
losophy, *then to draw a Conclusion
from an Affirmative Proposition re-
lating to a different Subject.* As if
I should say , If Water will not
wet the Goose's back, it cannot
wet your Cloaths (because there is
no

Comparison between a Goose's back and your Cloaths) But Water, &c. Very good, therefore do I adjudge such Reasoning very impertinent and frivolous, and the Comparison to bear no proportion at all, unless that perhaps the Cloaths and the Goose now may not unsuitably be disjoyn'd in the Comparison. But *ad Seria*----- You must know that comparative Arguments seldom run *quatuor pedibus*, as we say, and 'tis but very idle to rely on them for a proof, unless the Parallel be true as to all its parts. But in managing this Point plain, you are much out, by resembling the Curds of Milk (when perhaps you might the Cream or thin Skin of Milk usually appearing as it cools) to the fizeness

sizeness or viscosity of the Blood :
 But to give you a little insight
 into the Comparison of Milk and
 Blood, read Dr. *Willis's Pharmaceuticè*, p. 1. cap. de *Diuresi* ('tis
 translated into English for the bene-
 fit of the Ignorant, and mischief of
 his Majesty's Subjects, by putting
 good Medicines into mad mens
 hands to use them, in all Times
 and Seasons) and there you find
 a very suitable Comparison be-
 tween Milk and Blood, especial-
 ly as to its Fusion into various Se-
 rofities and Coagulation. There-
 fore I will give you these follow-
 ing Conjectures in the Case of a
 Rheumatism, drawn from the O-
 peration of Acids, and the Opini-
 ons of all other Learned Men, as
 they work on the Blood, Milk, and
 Urine.

1. As

I. As to the Blood, 'tis observ'd that all Rheumatick Blood has a Sifeness or Viscosity covering the Mass when let out of the Body, commonly call'd a *Skin*, or *Pellicle*, like Buff, which is more tough and harder then ordinary, not unlike the Skin or Cream on new Milk, when expos'd a little to the Air, as I said before. Which Skin or Cream, if while Milk is warm, any acid Liquor be thrown into it, never appears, but together with the Curds sink to the bottom, and only a thin watery Substance flows above the Curds, commonly call'd Whey, which will never contract any such Skin or Cream over it, stand it never so long in the Air. This I conceive to happen from the quick
and

and active Coagulation the Milk receives from the Acid, and joyn-
 ing with the Salts and Sulphurs
 (as *Willis* calls it) do precipitate
 both together, so that that Cream
 seems to be totally destroy'd. This
 Action, I think, I may safely say
 Acids is the cause of ; so that there-
 by is produced as it were two dif-
 ferent Bodies, *viz* a thick Curd
 and a limpid Water. Now were
 the Constitution of the Blood just
 the same, and the Effects the same
 in the Blood, as it is in Milk, with-
 out doubt Acids would be of sin-
 gular use to destroy that *Buff-coat*
Skin, but then the Consequence
 would be so fatal, that it would
 make two distinct Substances to
 flow (if they could flow at all)
 in the Veins and Arteries, *viz.* a
 Limpid

Limpid Serum by it self, and coagulated (at least almost-coagulated) Blood, which, if so, must certainly be of very fatal consequence to the Patient, and perhaps mortal. So that upon this account only, I shall presume, Acids to be no proper Remedy for the Blood, if it does all things in the Blood, as it does in Milk, when it is Rheumatical.

2. All Men allow that the Blood is apt to grow grumous in its own Nature, and not very prone to turn into Serofities (*vide Willis ib.*) as Milk long kept, will by the *fluor Salinum* (as he terms it) grow sour, and coagulate by bare standing. Now I am apt to believe that the Blood will do the same, as appears by experience, when

when it has stood long in the Air. All which Effects arise either for want of heat, want of motion, or some adventitious Acid accruing to it. Thus the Judgment may be given upon the Blood when drawn out of the body, for at first it seems as to all qualities alike to good sound healthy blood; when a little while expos'd to the Air, Motion and Heat abated, it contracts a Buff-colour'd skin, like that (in thickness I mean, not colour) call'd *Cremor*, being a true Symptom of the Rheumatick Distemper: such a Judgment, I say, may be given of it, when drawn out of the body; but that it is united with the mass of blood, and not distinct, like Whey and Curds, when it runs in the Veins, I make
no

no doubt ; therefore I cannot but esteem such a skin on it to be made partly by the ambient Air, out of the mass of blood vitiated by some Acid, either causing a fluor of the Volatile Salts , (for *Sales volatiles in fluorem depressæ, Acida evadunt*, says *Willis ib.*) or otherwise taken into the body. For acid Salts not only are apt to coagulate all Volatile Alcalies, but to unite Sulphures with them too, which, no doubt, but are supply'd in this case from the *Succus Nutritius*. Now as to the applying proper Alcalies, we know, they not only hinder milk and blood from contracting such a skin, but also prevent, either in the Vessels, or out, all manner of coagulation whatever.

Thus

Thus much as to the Comparison between Milk and Blood, so far as it may seem to illustrate the matter, and may give a light to find out the Cause of a Rheumatism. Tho' I never thought a comparative Argument of any great force, there being so many Requisites to make them both exactly alike.

Lastly in Blood newly emitted after Meals, there is generally a thicker Coat then ordinary upon it, which makes me not question but that it is the *Succus Nutritious* retens mix'd with the Blood, and emitted together. I have observ'd especially in Scorbutick Persons, that there is very oft a *Pellicula versicolor* upon the Urines, which the Learned *Emuller* attributes

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(vid.

(*vid. Principia Med.*) to an *Acido-salino-sulphureous* Combination of Matter, upon which he has made several very nice and accurate Observations, *vide Princip. lib. 2. cap. 4.* of which I'll only mention one, *viz. Salium Acidi, & urinosi copiosorum, aut acrium in vehiculo terreo solutorum saturationem mutuam, & hinc concretionem sequitur pellicula, & cremor pinguedinis instar, Urinae supernaturans diversimodè tincta.*

Then he subjoyns the Reasons and Explications of those divers *Phænomena's* he had made in Urines---*Origo horum omnium concrementorum coagulatorum videntur esse efficienter ab Acido, naturaliter ex terreo-Urinoso-fixiori invicem coagulatis, & coagmentatis, &c.*

The

The Experiment I'll here also insert, because it may happen that whoso reads this, may not think it worth while to consult that Learned and Ingenious Authour -----

Urinæ laudabiliter constitutæ instillavi Sp. Vitriol. rectificatum unde Tinctura exaltabatur ad Sanguineum ruborem, & copiose salia ruffa fundum Occupabant : Urinam hanc filtro ab his salibus fabuli-formibus separavi ; instillavi Linivium cinerum Clavellat. ad saturationem usque, & sequente die R^a successive remitti cepit in specie, pellicula densa, & firma Urinæ supernatabat ibidem.

Thus from Urine, so observ'd, may most probably be given some light of the Nature of Rheumatisms, Urine being agreed

on to be the Serum of the Blood separated by the Kidneys immediately from the whole Mass, suffering a longer *digestion* in the Body than Milk does, tho' separated from the Blood (tho' not without Controversie, and some doubt) by the Glands, as Urine is. Upon the whole, I shall make these following Remarks.

1. That the thin Skin or Cream on Milk is dissolved, and totally hindered from so coagulating, if any Volatile Alkali be instilled upon it, and that without any disturbance or commotion in the whole mass, which all Acids cause very much, and wholly dissolve the mass, which ought not to be done in the mass of blood.

Secondly, That the subject matter of such Pellicle or Skin, is the union of an Acid with an Oleaginous Substance, or Sulphurous Salt, by the means of an Alkali, without which they cannot be united, which if apply'd to the case of the Rheumatick blood, we may say that too great an Acid in the mass of blood, may, and properly does, unite the *Succus Nutritivus*, and an Alkali together, and cause that Buff-coat skin on the blood, being a manifest sign of the blood's being vitiated.

Thirdly, That in Urine an Acid joyn'd with an Urinotis (*i. e.* Alkalines) Salt, or acrious (which seems to be as it were an *Acido-Alcalino* fixed Salt, as I have elsewhere endeavour'd to prove, *vid.*

de Fermento Volat. Nutritio) cause a film or skin on the top of the Urine. Which Consideration being apply'd to the state of the blood, may in all probability do the same there, and cause the same in the Superficies of Rheumatick blood.

Fourthly, That all these *Phænomena's* arise *efficientèr ab Acido*, which the more potent it is in the blood, may make a greater Ferment, and cause a violent Fever also, indicated by a flammeous Urine. All Acids always intending, or augmenting the Colour of Urine to an high red. Hence comes a Rheumatick Fever.

Lastly, If Milk and Urine, contracting such a Film or Skin, being both the nearest Liquors to, and
most

and most immediately derived from the blood, do suffer from Alcalies Volatile, or fix'd such gentle Mutations as seem to alter and mend its Crasis, when as Acids seem wholly to destroy it, its highly reasonable to conclude, that in such cases Acids are very pernicious.

But to proceed with my Author; the next *Acids* he talks of are *Calibiats*, or to spell it truly, *Chalybiats*, which he proves to be strong Acids, as thus, p. 79. That Iron or Steel, until it be converted into a *Vitriol*, cannot act upon the Blood or Serum to cause any alteration in it, nor so much as any way enter into the Veins, or Arteries. Iron or Steel (p. 80.) given unprepared, are carried off by Stool

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with-

without the least alteration, or any part of it being admitted into the Blood. All or most (p. 81.) of the preparations of Steel, that I know of, that are good for any thing, are performed by the means of Acids. I love a Man should speak according to his Knowledge; and if he does not know of any Preparation of Steel but the Vitriolick, I doubt he knows but little. The former Preparation which I have mentioned in the Chapter of the Scurvy, I do believe he will say, is not made by an Acid, nor that of Dr. Bates by Salt of Wormwood. He may also consult divers Learned Authours, and I doubt not but that he will find that Steel given in Substance does signal Service, and causes great alteration in
the

the blood, and not goes off by Stool (as he says) and are good for something. All these positive Assertions will go a great way with Men of the same rank of Parts, and Understanding, but I hope he will not presume to put upon Men of Learning by them, it being evidently false, and against common Experience, so that it needs no other Confutation, but referring the Truth of it to the Common Practice of Physicians. But alas, the poor Gentleman speaks what he knows; and if he knows no more, nor no better, who can help it.

As to Vitriols of Steel being given in *Diarrhæa's*, or a *Fluxus Menstruus*, &c. 'tis so common a thing, that I wonder our Author should applaud himself, as to be
the

the Reformer of Physick in that Point, and attribute the virtue of the Medicine to the Acidity incorporated in the Steel, which every body allows without the least dispute. But as to Vitriol of Steel in these cases, I cannot but believe, and experience shews us, that all Steel is very apt to Vitriolize, the Air only being sufficient to do it, besides other Acids. But in the main, I will not say as our Author does, that Steel so vitrioliz'd is an Acid, because it has two bodies, but rather an Alcaly fix'd by an Acid, as Tartar by Oyl of Vitriol, which no Man properly calls an Acid simply, but an Alcaly fix'd by an Acid, from which arises a *tertium quid*, and it proves in some cases a very good Medicine.

cine. Thus no doubt but Vitriol of Steel, as being rather an Alcali fixed then an Acid, may sometime do good Service in this, and many other Distempers; for being admitted into the blood, the Alcalizate part, being thoroughly divided by the Acid (which a little quantity of Acid will) may spread it self the better to the mass of blood, and by that means do Service. Tho' I would not commend such a Medicine in general, but in particular Constitutions only, where the blood may be supposed to be so highly alcaliz'd, as not to be injured by a little Acid: For as Mr. Boyle observes, a few Drops of Spirit of Vinegar put to several pounds or pints of Urine (*pag. 118. Hist. of Humane Blood*)

Blood) would either be depriv'd of their acidity by some Corpuscles of a contrary Nature that they would meet with in the Liquor; or they would be so obscur'd, or over-power'd by the fugitive Salts it abounds with, that the acetous Corpuscles would not hinder the spirituous Liquor drawn from the mixture by Distillation, to be justly referrible to the Classis of the Volatile Urinous Salts. Thus, it is propable, it may happen with that little Acid that is convey'd from any Vitriol of Steel to the whole mass of blood. Tho' I say again that I shall be very cautious, not supposing our Author's Experience and Reason to be grounds sufficient enough to justify me to use such Medicines in a Rheumatism especially. CHAP.

CH A P. V.

OF CONSUMPTIONS.

AS to this Chapter it depends wholly upon his false Notion of the Globules of the Blood being broken, and extravasated, the Texture of them confirmed, &c. which are such strange Phantastical Notions, as I think not worth adding any more to Refute them, but what I have said in the first Chapter of this Treatise. And the two stories of one being supported near Forty years by Spirit of Δ , and another bit by a Viper not cured by Alkalies,

lies, I esteem little to the purpose; so that he has given me very little trouble to answer his Notion of curing Consumptions: Only the Passage I shall take notice of --- *If after trial (p. 102.) it be found that the Blood of Persons, in any the fore-mentioned Cases, hath any thing of Acid in it, I will own my self in the wrong. ----* A very good Confession, and ingenuous enough.

That Serum which is a part of the Blood is brackish, and has a Marine Salt in it, the very taste of it discovers; and Sea-salt is an Acid, as our Authour says, p. 103. Therefore 'tis plain there is an acid in the blood, as it in the vessels makes but one Body with the Serum

If

If you say, you mean the Mass when separated is not acid, or tastes brackish--- To this I rejoyne, That if blood stand a long while, the air only will turn almost the whole into a Serum, of the same taste and colour, as just after it was let out, *i. e. Subacidi saporis*, says, *Sylvius*; and if it stand so long as to putrifie, no doubt but it will yield a strong acid spirit, as our *Boyle* has observ'd, to whose Experiments I refer the Reader to determine, and you to own your self in the wrong. For tho' the taste be unctuous, and not perceptible by the Tongue, yet 'tis a common observation, that such Bodies (as Syrup of Sugar, Honey, Oyl, &c.) contain a strong Acid Spirit in them, tho'

tho' not discernable by the taste.

I could say much more to convince our Disciple of *Helmont* that he is in the wrong, and do hope that he has so much Modesty left to own himself, by what I have already said, to be in the wrong, as he said he would. But the ingenious Mr. *Boyle* has so many Experiments to prove an acidity in blood, that I shall think it lost labour to make a Repetition; only I shall say this, that the World may not be deceived, and run into Error with the loss of several Mens lives by these of Acids, especially and above all in Consumptions, I advise them to read our Authors Book with the same concern as we do the *Turkish History*, but not follow the Example;

Example ; wherein it is told us,
That a Bassa oft, to gratifie the
Will of a Grand Sultan, rides
down any Precipice, tho' never so
steep, and thinks it Martyrdom to
loose his Life so. And if any
shall be of the same Opinion to
gratifie our Author's Will, or No-
tional Directions, he must by all
Men of Sense be judg'd only a
Slave to Ignorance, and a Sacri-
fice to Fools. And thus we leave
him and our Authour together.

As to the Practice of Physick in
Consumptions, I must own, that
I think the giving of so many Pe-
ctorals and Balsamicks, does often
more mischief then good, because
it certainly spoils the Stomack,
and takes away the Appetite,
which generally in those, when
I once

once lost, is irrecoverably lost. This may be the reason why in these Distempers so many infallibly perish, and it's generally lookt upon to be an incurable Distemper. Now tho' I cannot think it at all rational to give Acids, but think them very pernicious, yet there are some Volatile Salts, which I believe, or at least fixed Alcalies mix'd with Volatile Salt may do great Service in this Distemper, tho' they may be adjudg'd by some too hot (tho' the Learned *Emuller* is of Opinion they are cooling) when the Hectick grows strong; Only this I can say, that *Sal Prunellæ* given in large quantities in a proper Vehicle, many times will tame the heat of an Hectick, without an Asthmatick

matick Paroxysm (which oft follows the giving the *Pulv. Patrum*) better then any Medicine I yet know : This must be administred with care and caution, because otherwise (being not adjoyn'd with something else to help the Stomack) it will cause Vomiting, or go off by Stool.

To conclude, an Heetick having a continual burning, or heat with it, being commonly a fatal Sign of the Putrifaction in the Lungs, and observing that when the Distemper is grown to that heighth, tough Elegm very plentifully is discharg'd by Spitting, which is a manifest sign that the *Succus Nutritius* is convey'd this irregular way, and not apposited, or agglutinated to those parts it

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should

should be ; I say, when I had observ'd these Symptoms, I began to reason with my self, why the Medicine (tho' drawn from a Volatile Foundation) I have so oft mention'd, *viz. Tinct. Sanitatis* might not do good Service, nay, indeed all Volatile Salts in a Consumption ; because I find, take a little of the tough Phlegm before-mention'd, so discharg'd by the Lungs of a Pthysical Person, and put it into a Spoon, and drop three or four drops of *Tinct. Sanitatis* upon it, and it immediately dissolves as it were into a thin Limpid water. So that the Lungs not being stuff'd, as before, play much freer, have a better expansion, and the discharge is generally made with little or no Cough
at

at all. This I dare aver, where no Hectick is, such a Medicine cannot but be highly profitable to any Person whatever that has a continual hawking and Spitting (as some have) as we say; but if an Hectick should be, as in all Consumptive Cases it seems to be, I have some reasons to believe that *Volatile Salts* never intend an Hectick so much as others may imagine. And if by this Assertion I shall seem to have establish'd a Doctrine as paradoxical as this our Disciple of *Helmont* vents, yet I think I can make it out upon much better grounds, and could upon occasion bring very good Proofs of what Service they have done in curing Hecticks, much more to advantage then any Do-

Urine establish'd upon an Acid
 foundation. And indeed if they
 should in their own selves intend
 the Hectick, as being hot, there is
 an easie way to temper them, so
 as not to spoil their Operation,
 and hinder their design'd effect.
 But more of this when I shall pub-
 lish my Book of the Diseases of
 the Stomack (because I am of O-
 pinion, that the first foundation of
 a Consumption is in the Stomack
 generally speaking) pursuant to
 the Hypothesis I laid down in my
 Treatise *De Fermento Volat. Nutri-*
tio. Thus have I gone through the
 whole Book (except the Conclusi-
 on) of our Disciple of *Helmont*,
 and instead of adding a Conclusion
 to this of mine, to make it corre-
 spond with his, I'll give him this
 Epistolary Advice.

Advice

Advice to the Author.

SIR,

YOU know very well that publishing things of this Nature in Print, gives every Person, who pretends to understand Physick, a just title to find fault, if any such appear; and indeed every Man has right to censure, since the very publication of it makes it (as the Latine is) *publici juris*, and ~~no~~ Propriety of the Author's after the publication: 'Tis upon this account that I have assumed the right to censure your Treatise, as others may do mine; and perhaps find as many Faults,

as I have in yours ; tho' I think I have not so grossly mistaken all along, to take that for the Efficient Cause which is properly (if allowed at all) the Material of a Distemper. This way of arguing I believe must proceed from the want of an University Education, and understanding Logical Inference, by which our Reason is cultivated, and we are taught *non nimis crasse sapere*. For I am of the opinion that four years studying Pharmacy, or indeed seven, is not sufficient ground to entitle a Man to publish Rules of Practice in most Distempers ; that is, to give Rules to others, which if erroneous, the Error is unpardonable, because it is with the loss of a Subject's Life, and so irretrievable.

able. This makes me very cautious of giving Directions for the use of Volatile Salts in an Hectick Fever, because it has been thought always prejudicial; nor have I the confidence to establish a Foundation of Practice on such Principles, because I do not as yet by so few Trials that I have made, think myself sufficiently enough instructed so to do. Therefore I much wonder, upon so little grounds as you seem here to have, that you should attempt a Practice by Acids, which if erroneous, will give an occasion for a great many young Men to do mischief; so that my Advice should have been to you to have better considered of it, before you had publish'd this Treatise, perhaps time might have corrected
your

your Judgment, and the many fatal Examples of your Acid Practice might have tempted you to have recanted your Opinion; for let me tell you, a good Physician must be a Creature of Industry, Learning and Experience, and not the product of four years study in a Shop, and perhaps four more Practice, to justify what a Man has ill learn'd. Industry is requir'd to make him study to find out all the ways possibly he can to improve his Knowledge, whether that Knowledge be acquired by Conversation or Books, is not material. Learning is so highly requisite, that without it it's impossible to make true Deductions from the Principles that are laid down, and the way of arguing with

without it as common, as ridiculous, viz. *This did good in such a case, and therefore it must be good in this; this I am certain will cure the Patient, and there is no better Medicine in England: I say, if in all such cases Learning does not assist the Judgment to discern between good and proper Medicines, between common and fatal Symptoms, &c. such a Person may indeed be called a Practitioner, but not a Physician, and no doubt but sometimes blunders upon a Cure. For I am not of the Gentleman's Opinion, who to ridicule (as he thought) all University Education, said, That he would send his Son two years to Oxon, and after that two more to Leyden, and then he did not question*

sition but that he would prove as
 good a Doctor as any of 'em all
 without (said he) the tedious fa-
 tigue of ten or twelve years study
 in our own Universities. Thus the
 unskill'd Physician comes chirp-
 ing into the World, and you may
 easily discover them by their in-
 coherent Talk, and the abundance
 of words to make up the defect
 of Learning in Physick, generally
 assuming to themselves a Character
 not from their own Merit or
 Learning, but from the Master
 they served under, as some Ap-
 prentices for having served this or
 that Alderman, highly value them-
 selves for their Skill in their Trade;
 not that I wholly reject such a
 way of Education in Physick, but
 only thus far I think proper, that

no such Method be taken without a thorough ground-work of other Learning, I mean Philosophy, to build on, before the Physician be suffer'd to scatter his wild Notions in print among Mankind, and before he has a right sence to judge whether they are wholesome Food or Poyson. The last ingredient is Experience, without which it is as impossible to be a Physician, as it is to be a Mariner, by reading in ones Study. For if my Learning has taught me how to make good Rules, my Experience teaches me how to make good use of those Rules, and the oftener I have cases occur, the better and stronger I am confirm'd in my opinion of the truth of those Rules I follow. Now that you, my Friend,

Friend, have Industry, Learning, and Experience enough to deserve the Character of a good Physician, your own Modesty seems to evince me to the contrary, because you profess your self not to pretend to absolute Mastership of Physick, and tho' your dependance was *wholly* upon your own Practice, I question whether it was so great, as to give you a Title to all these Requisites I have above-mention'd, tho' I think no body need ever call your Industry in question. This I should not say, but that I understand you are publishing an History of Humane Blood, both in its Natural and Morbid state. So that I advise you to consider well of it before you publish it, (for such a Treas-
tise

tise may be of admirable use) that it may seem to have been wrote with Thought and Judgment, to favour of the Scholar, Philosopher, and Physician. For it is a very ill thing to publish Matters of so weighty Concern to Mankind, as the preserving their Lives, and not to do it with abundance of Caution, Seriousness, and Self-debate. In the Conveyance of an Estate we generally apply our selves to those we call, and esteem Learned in the Law, and not every Pettifogger, or Smatterer to dispose of Matters of so high concern. Now my advice is to stay a little, and get as Learned in Physick as you can; for Industry I dare say you don't want, and Experience I believe you never will in

in this City, so long as there are so many Persons, as without examining the Skill, but being led on by the Town-cry of the Physician, will venture their Bodies to experience what Acid Medicines you please on them.

In the next place, do not too much confide in the Relation of Stories from other Men, nor draw an Argument from them as Demonstrative; for People who cannot speak upon their own Knowledge, may be deceived and imposed upon by a third Person, and consequently an intollerable Error may be propagated down to Posterity by hear-say. Besides the Age is of late given too much to what we now call Bantring, i. e. telling some Romantick Story
or

or other, in order to impose upon another Man's understanding, and ridicule him for being too easie of belief of it. Now this may be your case, for ought I know, about Mariners coming from the *East-Indies* and *China*, upon their Landing at *Cadiz*, and Eating Oranges and Lemons, to be cured of the Scurvy. It is possible Ships may stay at *Cadiz* oft, as you say, but not so probable, because so much out of their way home; but only this must be said, that during the War, there might be an absolute necessity for calling there for defence against Pirates, as well as support of Fresh-water and Provisions, but what did they usually do before the War? Never call sure to cure their Men of the

K Scur-

Scurvy, but make the best of their way home in order to a quick Market; therefore this being accidental, and perhaps used by very few, you ought not to make a general Conclusion from such a Story, That Acids are the only proper Medicines in the Scurvy.

The Stories you have cited out of *Helmont*, may also be, what we usually say Stories indeed, impose upon you and him together, and in the main will never serve to make a Demonstration in any case whatever, because the Reasons thence inferred may, and oft are fallacious, being drawn as Logicians say, à *Non-Causa pro Causa*, which no doubt is the case of that military Man you mention (p. 96.) to be preserv'd so long by Oyl of Sulphur.

Sulphur. For tho' you have translated it a certain Military Man (the words being *Vir quidam Annonæ militari inserviens à computis*) yet it seems to me rather to insinuate, as if he were a Clerk of the Militia Stores, for it seems by the Latine to denote so, who had then this suspicion that he should dye, and leave a numerous Issue Beggars. Now this Man if you take the Story right, was 58 years old in 1600. and liv'd 41 years afterwards, which makes him then to be 99 years old in the year 1641. which if so, he must be supposed to be born in 1542. Now Count *Egmond* and Count *Horne* were beheaded 1568 and he was then but 25 years old, and served the Bishop of *Ipres*. These

variety of Employments might, as we oft see it does, make strange changes in our Constitutions: Under the Bishop no doubt but that he thriv'd very well, till he came to the Age of 58; at which time Age growing on him, 'tis probable he might grow leaner, and suspect dropping into a Consumption, for want of the plenty of a Bishops Table, and by reason of the greater fatigue in managing Military Affairs. Thus in order to preserve his Health, his low Condition oblig'd him to Temperance, and his Labour preserv'd him from the growing of too gross Humours in his Body; so that it may be really presum'd the Oyl of *Sulphur* did very little, or nothing at all to preserve him to
 so

so long an Age. The Cause here was attributed to Oyl of Sulphur, but really Temperance and Labour, two good Ingredients to preserve Health, were probably the true Reasons of his long Life. This Fault oft attends the making a Deduction from a Story; nay, we see they who expressly write Observations in Physick, so often err in explaining the Causes and Reasons of the Distemper, that they really write very insignificant Stories for the most part, and little to any purpose.

As to your Spelling, 'tis not good to deviate from the Common way, unless you had some good Authority before you. For we seldom say *Hypocrates*, *Rezin* of *Jallap*, *Calibiats*, but *Hippocrates*,

variety of Employments might, as we oft see it does, make strange changes in our Constitutions: Under the Bishop no doubt but that he thriv'd very well, till he came to the Age of 58; at which time Age growing on him, 'tis probable he might grow leaner, and suspect dropping into a Consumption, for want of the plenty of a Bishops Table, and by reason of the greater fatigue in managing Military Affairs. Thus in order to preserve his Health, his low Condition oblig'd him to Temperance, and his Labour preserv'd him from the growing of too gross Humours in his Body; so that it may be really presum'd the Oyl of *Sulphur* did very little, or nothing at all to preserve him to
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Refin of Jalap, and Chalybiats, &c.
 Therefore pray in the next Impression get it mended, if it were your fault; if not, let the World know that the Printer blunder'd, and in so common words ought to be very much blamed.

Lastly, If you will persist in the Opinion that Alcalies are the Cause of most Distempers, especially those in this Treatise mention'd, do not make them the prime Efficient Cause, but the Material rather, and then you may have a just Excuse for your Error, and plead it over again. Or else style it an *Efficient of an Efficient Cause in Philosophy*, as in Causes there oft is; as when one Bowl strikes another, and he a third, the prime Efficient is the first

first Bowl, &c. So if there be a Tumor in the Gout, you may allow the Acid to drive and coagulate Alcaly in the Extreame Parts, so call the Alcaly the Cause of the Tumor. But let me tell you my Friend, this is an odd way of reasoning, and wholly Illogical, when we come to enquire into the true Cause of Things; therefore if you mean any such shift, lay it aside at present.

Thus Sir, I hope I have done you and the World Justice, as being a means to make you confess your self in the wrong, and the World to take care of being imposed upon in using Acids in several Cases as you direct. I hope you will not blame me that I have search'd so closely into

your Opinion, because I have not made any Personal Reflections on you, as being an *Apothecary* bred, &c. or the like. Such a profession, I think, is no debasing at all to a Gentleman of good Family and Blood sometimes, where the *Res augusta domi* will not allow to advance him into an higher Station : But yet if such an one sets up for a Dictator in Physick, without giving good and sufficient Reasons to convince me to the contrary, notwithstanding I honour the Man's Person and Profession, I must beg his pardon if I cavil at Reasons, especially if I find they may do Mischief in the World ; and by Reflections more severe then ordinary, if refractory, endeavour to reduce his stubborn

born Sentiments, and lash him into common Sense. Nor ought you to blame me that I have fix'd particularly on you, for your aim is to be known in this great City; and 'tis the Opinion of some, if a Man be known either for his good or his bad Deeds, so he be but known, he shall never fail of Practice; as *Erostratus*, who burnt the Temple of *Diana*, was as famous in the World for so doing (for ought I know) as *Solomon* for his Piety in building that at *Jerusalem*. This, if true, you will have more reason to thank me for the Censures I have made on your Book, then be angry for the Publication of them, and in a friendly manner acknowledge the Kindness of

Your humble Servant
Will. Coward.

From my House in
Buckinghamstreet
in York-Buildings
Oct. 12. 1697.

Postscript,

Since I wrote this, I understand that you have put out another Edition of your Book, I hope it is corrected and amended, for--una litum potest. If not, I think you not well advised; however the Book, as you have last published it, has escaped me, or else perhaps it might have afforded me more grounds for Remarks. For what Reflections I have made upon your Opinion, I think just, and if I have made any Personal, I design'd it not any farther then that it might expose and ridicule your Opinion, being ready to ask pardon for any Personal Reflections that are here thought so to be by indifferent Judges, if any such shall be made appear.

OF THE
NATURE
AND
USEFULNESS
OF
HYPOTHESES.

IT hath been observable that sometimes Men of Learning have decry'd Hypotheses, looking upon them as the *Chimera's* of a vain Imagination, every one forming to himself such Idea's as his Phansie directs, and when he has done

done that, then forms a Practice
 suitable to these Idea's he conceiv'd.
 This is the Practice of some Men.
 Others there are that form indeed
 certain Notions or Theoretical Con-
 ceptions of Things, to publish them
 as Rules to guide others, but never
 follow the same themselves. These
 are a sort of Men very much to be
 blam'd, because they only set
 Rules to direct others into an Er-
 ror; as if I should publish to the
 World that upon the Hypothesis
 I have laid down in the Cure of
 a Consumption, an Acid Medicine
 is the best, and at the same time
 use Alcalies in Practice. This
 is really no better then a down-
 right pernicious Lye, and deserves
 a very severe punishment, if the
 Laws of the Nation had provided
 any

any way how to inflict it. But since they are deficient in that, and in many other things, especially in relation to the regular Practice of Physick, I shall only advise such Men to consider seriously what mischief they may do in the world, for if any other out of Ignorance or Mistake, may be said to have *slain his Thousands*, such an one may infallibly and truly be indicted, as *Not having the fear of God or Man before his eyes, to have slain his ten Thousands*, and be convicted upon just grounds. Thirdly, There are a sort of Men who wholly condemn all sorts of Hypotheses in Philosophy, and all Doctrines of Physick built upon them, that in such Matters they are almost reduced to a Sceptical Despair, as
the

the Author of that most noble Poem call'd King Arthur, says in his Preface, That he is inclin'd now to think that 'tis an injury to a Man of good sense and natural sagacity, to be hampered with any Hypothesis, before he comes to the Practice of Physick. For this prepossession obstructs the freedom of his judgment, puts a strong byass on his thoughts, and obliges him to make all the Observations that occur to him in practice to comply with, and humour his pre-conceiv'd Opinions, whereas in reason his Observations in Nature should be first made before any Hypotheses should be established. A clear and penetrating Understanding, cultivated and matur'd by repeated diligent Observation, will in my Opinion make a more able and accomplish'd Physician than

then any Philosophical Scheme that
has yet obtain'd in the World-----.

Thus far this ingenious Gentleman,
with a great deal of Artifice, and
well-span Arguments, has magiste-
rially deliver'd his Opinion, which,
by his good leave, when thoroughly
examined, seems not to bear so
great a weight, as to convince my
Reason, and byass my Judgment,
tho' so fairly delivered as may
tempt any uncautious Reader to
be willingly deceiv'd, and believe
all he says to be true: And for
these following Reasons,

I. Because all Hypothéses, being
but suppositious (as the word de-
notes) are Notions grounded only
upon probability, and may be
term'd certain General Notions of
Things conceiv'd in a Man's Mind

to be probably true, and affording a good foundation to make some more particular deduction in order to practice. As for Example, The General Notions the World has conceiv'd of two Salts of a contrary Nature, they have call'd *Alcali* and *Acid*; that is, having observ'd that if two Salts make a *Luſta*, or Fermentation, as if they did not agree, or could not be contain'd in one place together, these Salts they term'd *Acid* and *Alcaline Salts*: These, I say, I may certainly term certain General Notions of Things conceived in a Man's Mind to be probably true. For whether it is because *Acid* and *Alcali* they do not agree, I don't pretend, nor ever will, to convince any one by a Mathematical

De-

Demonstration, as if it must infallibly and of necessity be so, for then perhaps I may be question'd what an *Acid* is? of what Particles compounded? and so in *infinitum*, such as nothing but Omniscience can resolve. It having been ever thought a sufficient Demonstration to a wise Man to give that proof of the Truth of a Thing, as the Nature of it would bear. The same parity of Reason may be urg'd for the Corpuscularian Philosophy, that Atomes of such and such a Texture, such a Figure, &c. produce such an Effect, these are the General Notions, or first suppos'd Principles a Man conceives within himself, and when he once begins to think these probably true, or at least cannot find

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out

out any better (being of a limited and finite Understanding) so as to amount to a Demonstration, he makes and forms particular Deductions from those preconceived Opinions, and applys them to particular Cases in order to found a Practice. As for Example, If an Acid and Alcaline Salt mix'd cause a Fermentation, such Salts may possibly do it in the Blood, or in any other Liquor, when conjoyn'd so as to cause Diseases, &c. This I take to be the true nature and state of Hypotheses; so that if this Ingenious Gentleman *has falln out with Hypotheses in Philosophy, and Doctrines built thereon, so as to be reduced almost to a Sceptical despair,* I do not see his Reason for it, unless he expects demonstration from things

things grounded upon probability, which the nature of the thing will not bear ; and it seems indeed a little Sceptical to require it.

2. But suppose all Hypotheses in Philosophy vain , and all Doctrines built thereon frivolous, you will have but a mean Opinion of your *Man of good sense and natural sagacity* to be hamper'd with these Hypotheses before he comes to the Practice of Physick : For if so, his *natural sagacity* would quickly discover the delusion, and *his good sense* prevent him from the injury an Hypothesis could bring on him, or hamper him with. Nor can I conceive how this Prepossession should obstruct the freedom of his Judgment, or put a strong byas upon his Thoughts (as this worthy and

L 2 ingenious

ingenious Gentleman seems to infer) and oblige him to make all the Observations that occur to him in Practice, to comply with and humour his pre-conceiv'd Opinions. For no Man can be conceiv'd to be so bigotted to a Notion, as to venture every thing he does in Practice upon that bottom, either to prove or make it true; I mean, no Man of Sense or Sagacity; for there are People in the World, I own, that will endeavour all the ways possible to demonstrate their Ignorance, by vaunting that as true as Mathematicks, which is grounded only on Probability, and add to the little weight of their Arguments a bold Confidence, or a down-right Impudence to byass the doubtful Believer. With such Men indeed

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Prepossession does all ; and Ignorance that's the Mother of all Devotion, makes them pay their homage to some whimsical Idea that a more whimsical Author has set up to be Idoliz'd. But what is all this against Hypotheses in general causing such strong Prepossessions and byas of Judgment in Men of sound Learning? Their Minds are as free with, as without an Hypothesis, and they can, and I am sure all ought to use them only at a juncture when their Judgment is otherwise puzzled, and almost baffled at the difficulty of a Case. And this makes me infer,

3. The absolute necessity (which is more then need be prov'd) of using some or other Hypothesis. For suppose, for example, I find a

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.Patient

Patient hath a violent Pain in the Intestines, and have tried several Medicines unsuccessfully to ease such an one of his torment. A Man of a considering Head (such as our worthy Author is) begins presently to think of all the Notions he has formerly read, to rally and muster up his Sense and Reason to beat out this latent Enemy, if possible, from his quarters. Now what is this but forming certain Notions in one's Head of this or that being the Cause of the Distemper, and consequently this or that Medicine will take it away, both being still grounded on Supposition, which is Hypothesis. Therefore, notwithstanding all that Observation can instruct us in, some or other Hypothesis of our own, or other Mens

in

invention must necessarily be followed, so that we are not really byassed by the Hypothesis, but the difficulty of the Case, and the plunge we are in how to bring about the Cure of our Patient. He that in such Cases will say he never thinks, or frames any Conceptions in his Mind to bring about his end, I am sure must contradict himself, or at least must prove himself but a sorry Practitioner, because all the Grounds and Reasons he has to act by, will be, That such a Patient had just such a Pain, and such a Medicine cured him; what rational Method this is of practising Physick, I leave all Men to judge, and how successful it will be, all Empiricks can easily determine.

4. *Observations in Nature should be first made before any Hypothesis should be establish'd.* Very good; but I would fain know how, and by whom such Observations should be first made. If by the unlearned and unskilful, Lord have mercy upon those poor Fools who venture their Carcases to give a Demonstration that such a Medicine did good, and confirm'd the Practitioner in his Opinion? How many must fall before such an one comes to be a compleat Physician, that is necessitated to found a Practice on Observation only, be his Understanding never so clear and penetrating, never so mature and cultivated by his own or others Observation? I must own indeed, and so must all the World, that Observation

vation perfects the Physician ; but
 the most perfect Physician in the
 World is some time at a puzzle,
 neither Observation or Hypothesis
 being able wholly to give him
 strength enough to encounter the
 Distemper. If our Learned Au-
 thor means, That no Man can be
 a good Physician without Obser-
 vation, I readily consent ; but why
 Observations should precede an
 Hypothesis, I do not understand ;
 for this were to turn all things
 backward, and teach a young Stu-
 dent the Practice of Physick first,
 and afterwards learn him all the
 Notions of Philosophy and Argu-
 mentation, which in my Opinion
 he had better to learn first ; for by
 them his Understanding is made
 clear and penetrating, his Reason
 culti-

cultivated and matured, his Apprehension quick and able to discern what difficulties may arise ; and how to be managed , if they do happen ; these are the real Effects of Philosophy : For to speak the truth, he that's able to form an Hypothesis, so as Philosophically to make it applicable to divers Cases in Physick, and is able also by Experiments and Observation (not by citing Stories of Oranges and Lemons) made upon rational grounds to prove the probability of its truth, must be a Man of Learning to do it well, ought to have a thinking Head and solid Judgment to manage so difficult a Point, to make what he discourses of *seem* true to Mankind, if it really be not so, and to the better
 sort

sort of Mankind too. For to
 make Men of Sense believe (says
 the Orator) is required great ar-
 tifice and studied reasoning to by-
 pass their Affections, not flashy and
 empty Notions, wherewith we u-
 sually cajoll the Vulgar. Therefore
 upon the whole I shall take it for
 granted, That all Hypotheses serve
 in the general to cultivate a Man's
 Understanding, in order the bet-
 ter to improve him in the Practice
 of Physick; That they cannot lay
 any restraint upon Men of good
 Sense and Natural Sagacity; That
 the Prepossessions they make in
 some Men's Minds are less injuri-
 ous than those drawn from Obser-
 vation; (for we see how perverse
 and stiff Men are in their Belief
 that this or that Medicine will do
 good

good *here*, if it once did *there*.)
 That such Prepossession cannot
 influence a Man of Learning to do
 contrary to right Reason to com-
 ply with an Hypothesis ; That an
 Observation neither can be, nor e-
 ver is made, but that some Hypo-
 thesis or other is preconceiv'd in
 the Mind of the Physician who
 makes the Observation , *i. e.* he
 forms to himself some Idea or No-
 tion by which he acts, and suppo-
 ses it probably true, That Hypo-
 theses in Philosophy, and all Do-
 ctrines of Physick built upon them,
 are not only requisite to be learn'd,
 as parts of a genteel and liberal E-
 ducation, but also very useful for
 all Students, especially in Physick,
 and almost absolutely necessary to
 understand, before they can be
 sup-

supposed to have Practice enough to make so often Observations as may sufficiently ground them. And lastly, That Observation without Understanding and Learning some Notions of Philosophy and Doctrines of Physick built thereon, cannot possibly make a good rational accomplish'd Physician only, because when he is at a *Nonplus* an Observation parallel is no more a certain Guide then an Hypothetical Notion ; and if his own Understanding, and his own Reason do not conjoyn one with the other, he had as good throw Dice for the Patients Life, and give him a Medicine not ascertain'd either by Hypothesis, Philosophy, or Observation.

Thus have I finish'd these short
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Remarks upon the Nature of Hypotheses, designing nothing else but to vindicate the true use of Philosophy and Notions to be antecedently necessary in order to the the Practice of Physick. I have made it short, because I design'd cursorily to treat of it, and not to say so much as could be said to vindicate the Usefulness of Hypotheses; but I would be glad to hear any thing from the Philosopher and Rational Physician, that may contradict these my Sentiments, and I shall acquiesce to be esteem'd as little in the World as the meanest of *Helmont's* Disciples, if I cannot justify what I have said to be true.

O F

Tinctura Sanitatis.

I Always was, and ever shall be
of the Opinion, That 'tis the
part of an honest Man, as much
as in him lyes, to be serviceable to
the Publick Good of Mankind,
and those who are led by meer
Self-interest, can neither be good
Men nor good Subjects. 'Tis up-
on this account that I make pub-
lick this so Noble Medicine, which
is as yet known to very few, yet
justly commended by all who have
used it, for the Success they have
had

had in prescribing it, and I only with others would give it its just Commendation, as they find Success by its Operation. I had not given my self, nor Reader, the trouble of prying into the knowledge of this Medicine, the manner of such Commendation seeming a little Empirical, but that I am perfectly convinc'd of its goodness by a long and oft repeated Experience ; and I am willing to be thought to have publish'd this under the Reflection of being accounted by some Empirical, rather than those who stand in need of it, should want the benefit of it. Tho' it is not the first time that Regular Physicians have claim'd to themselves some peculiar Medicines, and have publish'd them

them so to the World, as Dr. Goddard his Drops, Sylvius his Sal. Vol. Oleos. &c. and not been thought any more Empiricks for so doing.

The main reason upon which I undertook to find out this Medicine, was, because I did not know any Person (tho' there might be, and I not know it) that had wrote *ex professo* of the *Volatile Ferment of the Stomack*. Neither did the most Ancient Physicians believe any thing but an *Acid* could be the true and genuine Ferment of the same. Upon which account I made it my business and study, by Experiments and Observations, as well of my own, as other Physicians, to try if Reason, or Arguments drawn from other Mens Observations,

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rions, could be so convincing, or at least be made to have such a Resemblance of Truth, as to demand an Assent. This was the grounds of writing that Treatise in Latin *de Fermento Volatili Nutritio*, wherein I think I have made it appear, at least highly probable, if not demonstratively true (tho' I cannot admit a Demonstration in Natural Philosophy, to be as firmly grounded, so as to force belief, as in Mathematicks) That the true and genuine Ferment of the Stomack consists in a *Volatile Oleosi Spirit*.

And now having laid down these Principles, I yet design'd to give my self some farther light, if possible, into this Affair; that is, I endeavoured to make such a
 Medicine,

Medicine, as might, as to all its Qualities and Operations, be like the true and genuine Ferment of the Stomack, which Nature uses in promoting Digestion, thinking that if my Hypothesis were true, a Similar Medicine might be of singular Service in all the Diseases of the Stomack. Upon which I had recourse to Observation and Practice, and made several Experiments, as Cases did occur, to try if in diseased Stomacks an *Acid* or *Alkali* did most Service. Not that I was so byas'd and prepossess'd with the Hypothetical Notion I had laid down, as to have submitted to it right or wrong; but when I found my Observation and Common Practice with the use of this *Tinctura Sanitatis* confirm'd

firm'd my Hypothesis, and that this Alcalizate Medicine seldom deceiv'd me, and that Acids did, I thought I had gain'd a great Point to manifest the real Grounds of my Hypothesis, and demonstrate the Truth of the Theory by Practice, Experience having forced a Consent to those Notions, which I before had laid down: And thus far I grant Observation, not scrud or forced to comply with an Hypothesis, but subsequent to it, regularly instructs the Mind, informs the Judgment how to use those Principles before laid down, and not make Principles comply with Observation; and having such a Confirmation from Experience, I am induced to believe the Hypothesis to be true.

For

For I take an Hypothesis to be really a kind of Grand Centre (as I may call it) to which several Lines are drawn in the Circumference of Practice; and if Observation from Experience finds now and then a particular Case suitable to the Hypothesis (not drag'd on as it were to make the Hypothesis good) like a Line tending to that Centre, the Observer ought to remark it, and diligently set it down, till he has found out so many Particulars, as may make good, at *least* seem to make good, his General Notion. For if Observation precedes, tho' he has collected a great many, yet there is so great a Variety that will happen, either from the Constitution of one Patient and

another, the Medicines given perhaps before by another Physician, the general Symptoms in one Disease, as well as another, &c. that you will scarce find any one Observation, as to all its Points, alike with another, so that the Mind must be much at a puzzle what Hypothesis to form agreeable to those very Observations you have, tho' they all seem so very much alike. But enough of this Point, seeing I have said so much of it elsewhere.

As to the occasion of making this *Tinctura Sanitatis* (which for a Reason particular I call'd formerly *Tinctura Rulandi*) it was very accidental, being upon a Discourse with that eminent Chymist Mr. *Vigani* of Newark
upon

upon Trent, about the Preparations of *Sal. Vol. Oleos.* from whom I must own I had the Ground-work of making this Tincture. For observing how the Common Cry ran for the *Sal. Vol. Oleos.* and finding that every Man, even of the meanest Rank, had his way particular to himself of making his *Sal. Vol. Oleos.* and not finding at the same time, that what was commonly given was any better, or did more feats then *Sp. C. C.* if so good, I discours'd with him about making a much better Preparation, if possible, to substitute into the room of it; for I did not believe it to be that true and genuine Preparation that *Sylvius* intended. Then I order'd him to try to make one

according to the Method agreed on in our Discourse ; which he did ; and I believe he does to this day, and is one of the best Preparations of that kind I know now made.

But this did not satisfy, but that it was yet highly probable, upon the same Basis, to found a better Medicine, which put me upon trying farther Experiments at Mr. George Moults, a Chymist of deserved Fame on Old Fish-Street-hill, and after various Experiments there made about Digestion *in particular*, I find I had by some addition to it, much better'd the Medicine, and improved it yet some degrees farther, tho' not totally compleated it according to my mind.

At

At last I had recourse to that faithful and diligent Operator (Educated at the Feet of that Great *Gamaliel* of Chymistry, the Honourable Mr. *Boyle*) Mr. *Johnson* Chymist in *Fetter-lane, London*, and after various trials, I compassed at last what I at first proposed, which was to get a Volatile Salt out of a fixed Salt of *Tartar*, and so Sublime it, as to make it the Basis of my Medicine; which I found answered all my Intentions as fully and compleatly as I could wish, to extract this Tincture, and give it its true Colour, Efficacy, and Virtue, so much beyond the best *Sal. Volat. Oleos.* that I yet ever saw, or tryed.

When

When I had done this, my Curiosity led me on to try the difference by some Experiments of this Tincture and *Sal. Volat. Oleos.* and I found these.

1. I took some *Sal. Vol. Oleos.* about half an ounce, and poured on it about a Dram of Spirit of Sulphur, which made a manifest Ebullition, but did not alter colour very much, and rendered it very turbid without precipitation. Upon which I took the same quantities, as before-mentioned, of Spirit of Sulphur and Tinctura Sanitatis, and mixed them together, whereon followed a precipitation without any ebullition at all, or any signs of a Ferment upon the Conjunction, and it obtain'd a yellowish colour.

2. I took about two ounces of White-wine, and poured on it one dram of *Sal. Volat. Oleos.* which made the White-wine look like a dirty pale Claret. Now to try if this *Tincture* would do the same, I took some of it (I guess near the same quantity) and poured it on White-wine as before, which altered the colour very little, and made it turbid. These alterations manifestly shewing the difference of each.

3. I took about the same quantity, I mention'd, of *Tinct. Sanitatis*, and instill'd it into about three ounces of White-wine, upon which mixture I poured about one dram of *Spirit of Sulphur*, and it made no alteration, ebullition, or precipitation. Into another Glass

I poured one dram of *Sal. Volat. Oleos.* into three Ounces of White-wine, which operated as I before-mentioned ; upon this mixture I poured again about one dram of *Spirit of Sulphur*, as I had done to the *Tinctura Sanitatis* before, in White-wine, and it made a ferment or ebullition without precipitation, and reduced the White-wine to its pristine colour, fine and clear, as it was before. Which to try another event of the Mixture, I superadded more *Sal. Volat. Oleos.* to that Mixture which was so very fine and clear, and it return'd to a pale dirty Claret colour, with great ferment, as before : But pouring on more *Tinct. Sanitatis* in that Glass, which contain'd the Mixture of White-

White-wine, and *Spirit of Sulphur* and *Tinct. Sanitatis* altogether, it made *no alteration, ebullition, or præcipitation*. All which Experiments, I think, show enough the difference, as Mr. *Johnson* can testifie, before whom I made them all; so that whoever thinks this to be *Sal. Vol. Oleos.* and understands Chymistry, must first resolve these Difficulties.

1. Why one should cause a manifest Ebullition without Præcipitation, and t'other a Præcipitation without any Ebullition.

2. Why one should render White-wine so thick and muddy, as to appearance, like a dirty pale Claret, and the other alter the Colour very little; which had they been
been

been the same, they would have produced the same Effects.

3. Why one should make no Ferment or Ebullition or Præcipation with an Acid, but barely render the Liquor Turbid, and t'other cause a Ferment, or strong Ebullition without Præcipation. Which plainly shows it will not Ferment with an Acid like your *Sal. Vol. Oleos.*

These Operations seem to argue a diversity of Principles, and a manifest contrariety almost, at least grand diversity in the Original of each; so that it may be concluded by all rational Men past doubt, That this Tincture is no *Sal. Vol. Oleseum*, but much better Medicine: Because by common

mon Practice and Observation I have found it very useful in all Diseases of the Stomack and Indigestion, which I cannot say of *Sal. Vol. Oleos.* For,

1. If the *Stomack* seems any ways oppressed, either with *Wind* or *Crudities*, so as to cause a *Nausea*; or if an *Heart-burning*, as we usually call it, happens to trouble or molest a Patient, so as to grow habitual, that is, not to happen *now and then* upon smoaking Tobacco, or the like, but frequently after eating to prove very troublesome, and the *Stomack Sour*, the use of these Drops in a convenient Vehicle, will immediately remove it, which I have not observ'd from *Sal. Vol. Oleos.*

2. It

2. It is of great use in all *Violent Vomitings* or *Colical Pains* in the Stomack (improperly so called) of which I have by me two very eminent Cases of the Success of this, which I forbear to insert, because I design this to be short, and also to give a more particular one of them in a *Treatise* I design to publish, in some due time, of the *Diseases of the Stomack*.

3. Having observ'd that a few of these Drops, drop'd upon some *tough Pblegm*, dissolv'd it immediately, as it were into a *Limpid Water*, I immediately prescrib'd it to one *R. B. Esq;* who was very oft troubled with a *violent and dangerous Asthma*, and without any bleeding (which is adjudg'd to be the present Remedy) it relieved

lieved him in very few hours, and made him perfectly well, so as to go about his business chearfully the next day, when about Twelve a Clock at Night (at which time I was call'd to him) there seem'd little appearance of his Life. Hence I conjectur'd that this Tincture might be of admirable use in all.

4. *Phlegmatick and cold Constitutions* in general, and especially in all *Colds or Coughs*, where the *tough Phlegm* obstructs and stuffs the Lungs, so as the Person cannot breathe without great difficulty or wheeasing. Reducing the Blood and Serum to an equal mixture, so that it passes free and undisturb'd through the Lungs, with this convenience also, that

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it

it rather augments the Appetite, then spoil it (as we say) which Pectorals commonly so called will always do, though they may also remove the Phlegm. And because there is a great Sympathy oft-times between the Stomack and Head, I was of opinion that it might be good for

5. *The Head-ach*, especially such inveterate ones as I have known a great many have, and few Physicians cure. Upon which discoursing with my very good Friend and Acquaintance, Mr. *Edward Green* Chyrurgion, *London*; (whose own just Merit and Skill in his Profession, will recommend him with more Advantage to the World, then the best Character I can give him) He told me that
he

he had given it to a Patient, who was extremely and long troubled with a violent Head ach, and when other Medicines failed, this not only gave him present relief, but cured him. Observations of the like Nature I have made myself, but because I have others to witness it. (I have told you that it was known to, and used by very few) I thought it more fit to insert that than any of my own. This, among other Reasons, mov'd me to imagine this Tincture to be nervous, and very good in all nervous Distempers, at least such as are commonly so called, and proceed from an irregular Motion of the Spirits. As,

6. *Hysterick Fits*, or *Fits of the Mother*. The Success of this Tincture in taking them away, I mean, curing the Fit, when violent, has been such as has been beyond even my own Expectation: But I forbear enumerating the Virtues of this Medicine, least it seem too Empirical; but thus far I thought my self obliged to do, because whoever proposes any new Medicine to the World, ought to have something to say, when the question is ask'd, What is it good for? I for my own part have used it several years, I mean such a Medicine drawn from the same Basis as this, tho' I cannot properly say, it is the same; for by repeated Experiments I have so much improv'd it, as my former
seems

seems to be swallowed up in this latter Composition. The best use I found, *when well and travelling*, not being able, at least not willing, to drink ill-brewed Drink upon the Road, as oft happens, when I was *very thirsty*, about twenty or thirty drops in a Glass of fair Water, perfectly took away my Thirst, gave me new Spirits to go on my Journey, better than the best Malt-drink I usually met with, or indeed Country-wine commonly. In the Summer time it so tempers the Water, that tho' you are hot, it does you no prejudice; and in Winter, if taken in Wine, it warms and comforts the Stomack, and so invigorates you with new Spirits, as to make you pass on your Journey with chear-

cheerfulness, much beyond the best *Sal. Volat. Oleos.* that I yet ever try'd. I should particularly recommend it to all Military Men in a Camp, who will find it the best Friend and best Companion in an hot or cold day indeed, when its happy if they get any Water to take their Tincture in, being very pleasant and very comfortable to any fatigu'd Person whatsoever.

This is all I shall at present mention of it ; but if any Person shall be so censorious, as to reflect on me for writing in such a manner of a Medicine, and call it down-right Quackery, I shall willingly be content to bear the Scandal, so it do but so much good in the World as I design, and hope it will do in those particular Diseases

cases I have before-mention'd, of
 which I have several very good
 and material Observations to con-
 firm what I here insert, but think
 it too tedious to insert them in this
 small Treatise. Tho' I can easily
 return this Answer; that 'tis the
 Opinion of a much wiser Man,
 and conversant in the weighty
 Affairs of the World, as being in
 an higher Station than my self,
That he that writes with Learning,
and gives good Reasons for what
he does or says, because he is forced
sometimes to tread in the same steps,
and use the same method as Quacks
do, may as well be blamed, as the
best Physicians for wearing a Vel-
vet Coat, because Mountebanks have
of late made it their Badge of Di-
stinction to the World. This in-
 deed

deed may serve for a Jest, but not
for a just ground of a Dislike, or
a Disapprobation of the Skill of
the Physician.

Advertisement.

BESIDES what I make, and oft
have made my self, Mr. Johnson
or Mr. Moulton Chymists before-
mention'd, can supply any one
with what Quantities they please
of *Tinctura Sanitatis*, in order to
make the Trials in the Distempers,
and for these ends that I have
mention'd.

F I N I S.

